ON THE COMPARATIVE VALUE OF DOCUMENTARY AND ARCHITECTURAL EVIDENCE IN ESTABLISHING THE CHRONOLOGY OF THE ENGLISH CATHEDRALS.

By Francis Bond [*F.A.*], M.A.Oxon., F.G.S.

Read before the Royal Institute of British Architects, Monday, 21st November 1898.

SOME time back I was led to examine the accepted chronology of the south side of the nave of Waltham Abbey Church.* On examination it appeared that the eastern bays differed slightly in date from the western bays; but that the whole of the work was of the usual character of that done in the first half of the twelfth century, and in particular was closely akin to the work at Durham, Lindisfarne, and Dunfermline, and had nothing in common with the eleventh-century work either of England or of Normandy. That none of Waltham nave was built before 1120 was an irresistible conclusion. But if the voluminous literature on the subject † be examined it will be found that men of high attainments and technical experience agreed to a far earlier date: viz. that much of the nave, as we now have it, is the identical work consecrated in the year 1060 or 1062, in the time of Edward the Confessor. This contention was backed by the great name of Professor Freeman, whose knowledge of the Romanesque architecture of the Continent and England was very extensive; by Bishop Stubbs, the historian of mediæval England; by Mr. Thomas Wright, the well-known antiquary; by the late Mr. Burges, who was in charge of the restoration of the church; and by Mr. Reeve, who assisted in the restoration, and published measured drawings in 1876, showing the portions purporting to be of the days of Harold. Yet, as I have said, the conclusion that no portion of the work is less than sixty years subsequent to the reign of Harold is patent and obvious. Waltham Abbey, however, is far from being the only example of what may, I hope, without undue presumption, be termed archæological aberrations. A striking example is that of the cathedral of Wells. One school of archæologists dated the nave after the west front, though the nave is far the more archaic in character of the two. On the other hand, Professor Willis, *clarum et venerabile nomen*, dated the west front after the nave; unfortunately he puts both a whole generation too late. Now, on seeing these extraordinary perturbations of chronology, emanating from men of very high authority as antiquarians—only two instances have been adduced, but you will be able to make a long list for yourselves—one could not help asking, one felt bound to ask, what was at the bottom of it all? Was there some radical error in principle, some flaw in the methods of research employed, which led to errors of such portentous magnitude? An error of fifty or sixty years, as in the examples of Waltham and Wells, is really portentous. What was the cause of it? That is the subject to which I propose briefly to address myself this evening.

This cause, as the title of this paper may have led you to surmise, appears to lie in the wrong estimate usually formed by antiquarians of the comparative value of documentary and

* See *Builder*, April 30, May 7, 21, June 4, 11, 1898. *Architect*, January and February 1876; *Builder*, vol. xviii. p. 71.

† See *Gentleman's Magazine* for 1859 and 1860;

architectural evidence. By documentary, or, as it is often called, historical evidence, I mean the references, direct or indirect, to the history of the cathedral, in annalists, monastic chroniclers, fabric rolls, registers, wills, and the like. By architectural evidence I mean the evidence of the stones and mortar.

The question is, Which is the more reliable? The answer shall be given in Professor Willis's own words, which fairly represent the accepted opinion of archæologists. They are taken from the Proceedings of the Archæological Institute at Peterborough in 1861. He says, "In all investigations of this nature I am of opinion that it is requisite to ascertain *first* whether there exist any contemporary documents which may throw light upon the history of the fabric, and *then* to let the stones tell their own tale." First you are to study the documentary or external, then to study the architectural or internal evidence. Not till your mind is prejudiced and warped by what the documents assert are you allowed to study stones and mortar. The stones and mortar are called in to corroborate the historical evidence; but you must never call them in to correct it. And if one contradicts the other, the one to go to the wall must always be the architectural and never the documentary evidence. This—to put it crudely—is the criterion as to the use of evidence in establishing the chronology of the English cathedrals. The rightness of this criterion is what I propose to discuss.

What does this documentary evidence consist of? Partly of statements, usually brief and obscure, in annalists and chroniclers; partly of the accounts, which may have been preserved in fabric rolls and the like, of the expenditure from year to year on the building; partly of the dates of consecrations and the like. Taking these in order, it is to be remarked in the first place that Professor Willis's criterion strictly confines itself to contemporary documents. Few of the statements, however, as to building operations in the cathedrals are made by contemporaries; frequently they are the words of people who lived several generations or even whole centuries later, and who knew as little about the matter in hand as ourselves—*e.g.* the ascription of the building of the choir, transepts, and nave of Wells, as well as the west front, to Bishop Jocelin, which was accepted as an article of faith by Professor Willis, Professor Freeman, Mr. J. E. Parker, and almost everybody else till lately, was based on a statement of Bishop Godwin, which was itself based on an anonymous manuscript, "The Canon of Wells." But Bishop Godwin lived in the sixteenth century, and the manuscript was written in the fifteenth century; so that, far from being contemporary documents, one was three and the other four centuries subsequent to the matters described. The stones and mortar of Wells told their tale with perfect clearness to Professor Willis, to Britton and others; but they refused to believe it because it conflicted with documentary evidence, and that at least 300 years more modern than the matters described in it. So that it is not going too far to assert that it has been a rule in English archæology that where documentary and architectural evidence conflict, the latter shall go to the wall. So much for evidence which does not come from contemporaries.

But if the evidence does come from contemporaries, can it be trusted? Well, we are dealing with historians who lived in the twelfth century and onward. Did they in those illiterate days possess what is called nowadays the "historical conscience"? I am afraid not. So far from that, I believe that they sometimes deliberately misrepresented and falsified their history. They admit themselves that they did; so that an action for libel does not lie against the writer when he charges them with being at times deliberately mendacious. Here is what one of the chief of them, Matthew Paris, says. He is describing a new oak roof at St. Albans, constructed at the instigation and by the labour of Michael of Thydenhanger, monk and camerarius. "Nevertheless," he adds, "these works must be ascribed to the abbot, out of respect to his office." There was not much of the "historical conscience" in

Matthew Paris. The fact is, the monastic and mediæval chroniclers had likes and dislikes. Nothing was too bad to say of an unpopular abbot or bishop, nothing too good to say of a favourite. What is worst of all for the archæologist, any good work, any fine building erected by the unpopular may have been attributed to the popular abbot or bishop. Take an example from Hereford. The north transept of Hereford Cathedral—one of the most original and lovely designs in English mediæval architecture—has been attributed again and again to Bishop Swinfield (1283–1316).* Yet it is quite different in character from Swinfield's work: the Cantilupe shrine, the inner north porch, the north-east transept, and the aisles of nave and choir. Its detached and banded Purbeck-marble shafts, the bands of tooth ornament in the arches, the cusped circles of the tracery of the triforium and of the windows, the curious circular windows of triforium and clerestory (reminiscent of Westminster and Lichfield)—all point to an earlier date, and make it synchronous with the beautiful angel choir of Lincoln. But there is one piece of evidence that seems to me irresistible. The design most certainly came from the same brain as that of the exquisite tomb of Bishop Aquablanca (1240–1268). The man who built the transept built the tomb. Now no one will assert that Bishop Swinfield would build a tomb—especially such an elaborate and expensive tomb—for Aquablanca. *Ergo* neither did he build the transept. Aquablanca built his tomb in his own lifetime, as most prelates did; and he built the transept as well. Why then has the credit of it been taken from him so often and transferred to Swinfield? Simply because Swinfield was popular at Hereford, and Aquablanca was not. Swinfield made the fortune of Hereford Cathedral by procuring for it a new saint in Thomas Cantilupe. Aquablanca was one of the intruding foreigners so bitterly loathed in England in the thirteenth century—an Italian from Savoy. The canons had elected a nominee of their own; Henry III. had annulled the election in favour of Aquablanca. The new bishop was driven out of his own see by the barons in 1263, and was rebuked next year by Henry III. for not being in it. He was again attacked by the barons in his own cathedral, imprisoned, his goods confiscated and divided. He had advised the king to tax the clergy; and no treatment was bad enough for him, and no abuse too strong. His end was miserable; he died a leper. What wonder then that the credit even of his good works was denied him! Yet he was not altogether the scoundrel he has been represented to be. When successful in litigation with the city, he remitted half the fine, and handed over the other half to the fabric of the cathedral; he gave the manor of Holme Lacy to the cathedral; he remembered the poor in their affliction, and from his bequest 2,000 loaves are still distributed every year to the poor of Hereford.

On similar grounds we may dispute some of the bewildering chronology of the monastic chroniclers of Peterborough, Swapham and Abbot John. Both assert that Abbot Benedict built "the whole nave from the central tower to the west front." Abbot Benedict ruled from 1177 to 1194. Swapham was still living *c.* 1240; so that he was probably alive, though but young, in Benedict's time. Yet what he says is false.† The whole of the eastern bays of the nave, with the exception of the clerestory, is strictly Romanesque: the only part which can possibly have been built by Benedict is the western transept, the adjoining bays of the nave, and perhaps the clerestory. Now, what may have induced the chroniclers to magnify the work of Benedict? Simply that he had wrought much good to the abbey. He was a monk of Canterbury and a personal friend of Becket; the monks no doubt thought themselves lucky to get an abbot fresh from the scene of the murder. Moreover, the monks of Peterborough were short of relics; Benedict "conveyed" from Canterbury inestimable treasures—

* The author of the handbook on Hereford in Bell's Cathedral Series, with great impartiality, gives the date on page 43 as 1287, and on page 9 as anterior to 1268.

† The handwriting of Swapham's book is said to be that of the latter part of the fourteenth century.

two crystal vases filled with Becket's blood; the martyr's shirt and surplice; and the blood-stained stones of Canterbury north transept, where the murdered archbishop fell. A little falsification of architectural history was surely permissible in favour of so great a benefactor to our abbey!

So far from being all built in the time of a single abbot, there is clear internal evidence of four distinct building-periods in the nave of Peterborough. (1) At the same time with the crossing, and to support the piers and arches of the crossing, part of the eastern bays of the nave was built. This included one bay of the clerestory, which differs externally from the western bays in having two contracted arches instead of a single wide one; two bays of the triforium, which have the hatched tympanum of the choir and transepts; and the five eastern bays of the pier arcade—or most of them—which, with the whole of the bays on the south side, except the westernmost, have bases of Norman profile, and not the Attic base which appears in the western bays of the north side. To this period also probably belongs at least the lower portion of most of the south aisle wall, which would be needed early to shut in the cloister on the north. The shafts and string of the inner arcade of this wall are much ruder than those in the north aisle. The wall of the south aisle at first extended only as far as the Abbot's doorway; for at that point the intersecting arches of the arcade are reversed, from left to right. (2) The remaining southern bays of the pier arcade and triforium of the nave, except the westernmost bay, come next. They were long in the open air; the putlog holes were found at the restoration to be crammed with ancient bird-nests. (3) Next came the remaining bays of the north side, which have the Attic base, the westernmost bay excepted; when these were completed as far as the top of the triforium, the nave was covered with a temporary roof. (4) Fourthly, perhaps in the time of Abbot Benedict, was built the clerestory of the whole nave, which has pointed hood-moulds, and the new Transitional west front (merged later in the present Gothic west front); then the Transitional west front was joined up to the Norman nave.

All the chroniclers, however, were not mendacious; they would not lie except in a good cause. Nevertheless they were not writing for architects, nor were they architects themselves; consequently there is no precision or definiteness about their language; and it is extremely dangerous to build large theories on their curt and nebulous statements. Very often the chronicler, without being deliberately mendacious, is unintentionally misleading. I am not sure there is not an example of this in Simeon's Continuator at Durham. He says, writing not much later, that the nave was finished by Bishop Ralph Flambard, who died in 1128, "ad sui usque testudinem." If "testudo" means "vault," it may refer to the vault of the aisles, or to the high vault of the nave. If the latter, then, arguing from another passage in the same writer, which is to the effect that "the nave was finished by the monks between 1128 and 1133," Canon Greenwell is right in asserting that Durham high nave was vaulted *c.* 1130, and the choir probably *c.* 1100, which would prove that in vaulting the English builders were a whole generation ahead of their Romanesque brethren anywhere on the Continent. But "testudo" may refer quite well to the vault of the aisles, in which case what Flambard did was to construct and vault the aisles, and to build the pier-arcade and triforium of the nave; and what the monks did was to complete the nave by building the clerestory and roofing it in wood.

Again, the chronicler's statement may be perfectly true; but we may apply it to the wrong building: in which case it is we ourselves who falsify history, and not the chronicler. In 1284 Archbishop Wickwane and in 1287 Archbishop Romayne issued letters of indulgence for forty days to those who should contribute to the works of Ripon Minster. This Mr. Walbran interpreted to refer to the west front of the church, whereas it refers to the east

front, which from its similarity to the work at Guisborough and elsewhere was plainly rebuilt *c.* 1290. Thus he dates the work both in the west and in the east fronts wrongly.

Then, again, there are many gaps, and huge gaps, in the monastic chronicles, just as there are in the geological record. Some of the biggest works are not mentioned at all. Swapham, who saw that marvellous façade at Peterborough rise before his eyes, has not a single word about it, though he takes upon himself to describe work that was done when he was in short frocks. We must not argue, because there is no historical record of work done by a particular bishop or abbot, that therefore he did nothing. It would be just as perilous to argue in geology that no strata were deposited, no new creatures evolved, between the Carboniferous and New Red Sandstone periods. Yet large theories have been built on this dangerous negative evidence. The peril is that new evidence may turn up any day; the gap may be filled up; the prelate who has been credited with no work may turn out to have been building busily all the time. This was the case at Wells. Stones and mortar plainly say that the choir, transepts, and nave were built successively in the last quarter of the twelfth century. The bishop of that period was Reginald Fitz-Jocelin (1174–1191). Nothing was known of him as a builder; much was known of Bishop Jocelin (1206–1242); therefore, to the utter upsetting of all canons of architectural criticism, choir, transepts, and nave were all put to the credit of Bishop Jocelin, as well as the west front, which is undoubtedly his. But the west front is far more advanced in style than the nave and the rest. Therefore the archæologists evolved out of their inner consciousness a wholly imaginary school of Somersetshire masons. Two sets of masons were working together at Wells, they said, in Bishop Jocelin's time; clever masons, imported from Lincoln and elsewhere, with the latest thing in Gothic; these were employed on the west front; the others were local masons, who in their stupid, backward, Somersetshire fashion worked away at the nave after a style which had gone out of use elsewhere for a whole generation. Unfortunately for this theory, Mr. Bennett has lately deciphered a charter prior to 1180 in which Bishop Reginald "arranges in full chapter for a munificent grant in support of the fabric, until the work be finished." And another charter of the same bishop's time speaks of "the admirable structure of the rising church." So vanishes into space Bishop Jocelin's share in choir, transepts, and nave; and that delightful school of stupid Somersetshire masons invented to prop it up. One reason, perhaps, why the archæologists were shy of giving the credit of the Wells work to Bishop Reginald was that he was a good sportsman, fond of hawking and hunting: he procured from Richard I. a confirmation of the alleged privilege of the Bishops of Wells to keep "canes ad fugandum per totam Somerset." He had good sport, no doubt, in the forests which then covered the Mendips. But because he was a great sportsman we must not conclude that he was not a great builder. It were as irrational for a twenty-sixth century historian to deny that Lord Rosebery was once Prime Minister because he twice won the Derby.

The danger of building theories on negative evidence may be illustrated again from Worcester. Bishop William of Blois is recorded to have laid the foundations of the "novum opus frontis" in 1224. Nothing is recorded of any building during the earlier years of the thirteenth century. Hence it is asserted that the whole of the eastern part of Worcester Cathedral was built after the year 1224. The evidence of stones and mortar, however, points to two building periods, both confined to the first half of the thirteenth century. The foliated capitals of the western bays are in high projection, plainly subsequent to 1224; those of the eastern bays are small and knobby, and, with the double arcade in the triforium, the ornamentation of the tympana in the triforium arches, and the sculpture of the spandrils of the wall arcades, are obviously inspired by St. Hugh's work at Lincoln, *c.* 1200. Differences also exist in the mouldings of the transverse arches of the vault, the eastern arches having a

ribbed soffit, the western arches a hollow soffit; and the tooth ornament occurs only in the western bays. Moreover, convenience would dictate that the eastern bays should be built first, since that could be done without interfering with the services in the Norman choir. Historical evidence points the same way. For miracles commenced at the body of St. Wulfstan in 1201, and he was canonised in 1204, when money would begin to flow in abundantly. Moreover, there was a great and solemn consecration of something at Worcester in 1218 before the young king, Henry III., and a great company of bishops, abbots, and nobles; the "something" that was then consecrated must have been the eastern bays or retrochoir. This being completed, the services no doubt were transferred to it from the Norman choir; the latter was pulled down; and the foundation of the western bays was laid six years later by Bishop William of Blois; the "novum opus frontis" meaning the newer bays which were commenced in 1224, in contradistinction to the bays commenced *c.* 1204. A precise parallel, and a contemporary one, to the course of building at Worcester is to be seen at Rochester.

So much for the value of the evidence of the chronicles, whether positive or negative evidence. It will be noticed that, in respect of Worcester, a new species of evidence was adduced—the date of a consecration. The dates of consecrations, however, are not always of value. We have dozens of examples, English and French, of consecrations which have no reference to the completion of a cathedral or of any important part of it. On the other hand, we know that important parts of cathedrals were completed at such and such dates, and yet no consecration takes place. The fact is, a mediæval cathedral never was finished, and so was never ready for consecration. There was always more new work contemplated; or extensive repairs or reconstructions necessitated by time and decay, or by fire and tempest. Still more remarkable is the incompleteness of the French cathedrals. Where are the seven towers and spires of St. Denis, Laon, and Rheims; the nine towers and spires of Chartres? The result is, I believe, that some cathedrals never were consecrated at all, and have remained unconsecrated buildings to this day. In England it seems to have been felt quite a scandal that services were held to such a large extent in unconsecrated buildings. In 1237 Cardinal Otho, Legate of Pope Gregory IX., convened a council at London, which directed that all churches and cathedrals, "not having been consecrated with holy oil, though built of old," should be solemnly dedicated within two years. It was at this time that Peterborough was consecrated. Evidently we must not lay stress on dates of consecrations, unless they are corroborated from other sources.

We are often told, too, that the monks or canons entered the choir and commenced services in it in such and such a year. From this it is sometimes inferred that the choir was then complete. Such an inference may be incorrect. Services may have commenced as soon as the lower story of two or three bays was ready; a temporary wooden roof being erected over it either at the triforium or at the clerestory level—*e.g.* at Durham so much work might well be done between 11th August 1093 and 6th January 1096; but it is impossible to believe that in these two and a half years there was built the whole of the choir, the crossing, and the exterior wall of the church, throughout the whole of its extent, as high as the top of the aisle arcade which surrounds the entire building from east to west; which is the view adopted by Canon Greenwell.

At Peterborough proof positive exists that the monks entered the nave before they built the clerestory. At the foot of the clerestory passage on either side of the nave is a row of holes (not putlog holes), each exactly corresponding to a hole on the opposite side of the nave. Plainly they held the timbers of a temporary roof which covered the nave till the clerestory was built, probably by Abbot Benedict.

But there is one kind of documentary evidence of the utmost value, if we can read it

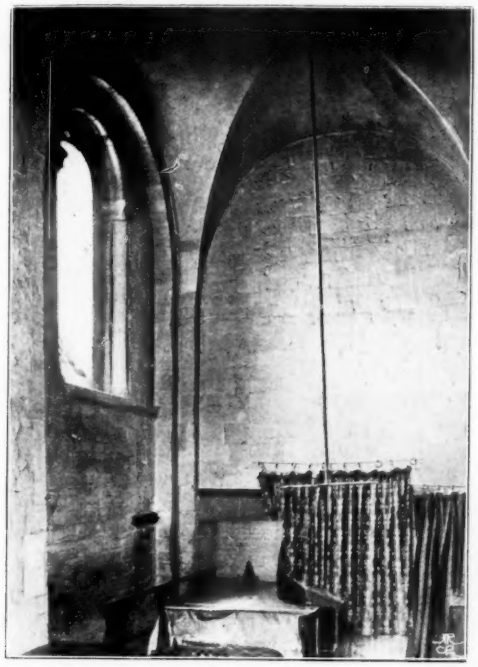
and understand it. It is the evidence of contemporary fabric rolls, charter registers, and the like. Here we have the information at first-hand which we only get second-hand from chroniclers and historians. Archdeacon Freeman says rightly of Exeter, "It cannot be too strongly insisted upon that our supreme and often our sole authority in these matters is the contemporary evidence of the fabric rolls, or other original documents." Unfortunately some are non-existent, others unexplored or unpublished. Besides, it is not easy to read accounts written in Latin, and in such Latin; and full of abbreviations, the latter a fertile source of error. Even if we decipher and translate them correctly we cannot always be certain to what part of the building they refer. Frequently, however, they have been carelessly copied or carelessly printed. There is a classical instance at Lincoln. The manuscript of Giraldus Cambrensis was quoted as asserting that St. Hugh, *c.* 1200, built Lincoln Chapter House, "capitulum." Mr. Edmund Sharpe, the one archæologist who ever upheld the evidence of stones and mortar against that of documents, plumply denied it. On reference to the manuscript it was found that the word was "capicium," the head or apse of the church. It had been carelessly copied by Wharton. So again at Exeter. The fabric roll of 1308, the first year of the episcopate of Bishop Stapledon, gives the various items—red lead, vermilion, varnish, &c.—for the painting of the vault of the choir. On this Leland in the sixteenth century asserts that the choir was vaulted by Stapledon, whereas the plain inference is that if the vault was painted in the first year of the episcopate of Stapledon it must have been built by his predecessor, Bishop Bitton. The historians then may have read original documents carelessly or have remembered them incorrectly. Many of the terms, too, employed are in themselves ambiguous, *e.g.* "frons" may mean either east front or west front. And as at Peterborough there were three west fronts completed or commenced, there is a choice in that cathedral of four different meanings.

Attention may now be directed to an ambiguous word, "teres," employed not indeed in a fabric roll, but in the chronicle of William of Malmesbury, who records that Bishop Robert de Losinga (1079–1096) commenced a Norman cathedral, "Aquensem basilicam in tereti schemate imitatus." This is supposed to mean that being a native of Lorraine, and acquainted with the Rotunda built at Aix-la-Chapelle by Charlemagne, he commenced to build at Hereford a circular church in imitation of it. But "teres" does not mean "circular;" it is applied to anything smoothed or rounded by rubbing, terendo; *e.g.* to a man who is "in se ipso totus, teres atque rotundus, Externi ne quid valeat per læve morari." It is also applied to any long round object, such as the shaft of a column or the trunk of a tree. With a connotation so vague it is certainly dangerous to build a chronology on its use in the passage quoted above. In that passage two different interpretations are possible. Following the usual interpretation of "teres," the passage may mean simply that Bishop Robert built in dressed stone, not in rough Anglo-Saxon fashion. Taking the other interpretation, it may mean that he built a long cathedral, which was rounded ("oblongus simul et rotundus." Facciolati), *i.e.* it was rounded at the ends, had an eastern apse, and perhaps was intended to have a western apse as well, which would be quite in German fashion, the precise form shown in the ancient plan of St. Gall. But it is unnecessary to go into refinements of philology; as I said above, the chronicler was not an architect, nor writing for architects; nor is it likely that he had ever seen the church at Aix-la-Chapelle, which he says the bishop copied. Sir G. G. Scott, who was exceedingly cautious in making assertions about mediæval chronology, affirmed downright that there is not a single stone left of the eleventh-century cathedral of Robert de Losinga. I cannot help feeling that he was misled by mistranslating the phrase "in tereti schemate." The east wall of the south transept, the pier arcade of the choir, both aisles of the choir, and the Norman sacristy on

the south of the choir have all the appearance of eleventh-century work. The south transept has a curiously archaic look. Its arcading, not confined, as usual, to the wall space below the range of lower windows, but carried right up to the triforium, may be paralleled in many early Romanesque designs in Lombardy, such as the façade of St. Sophia, Padua. The balustraded triforium, with its irregular spacing, finds an exact parallel in the undoubted eleventh-century transepts of St. Albans, Chester, and Pershore. It is quite impossible that it can be of the same date as the grand triforium-bay of the twelfth century immediately to the north of it. The misshapen unribbed vault, the rude shaft and base in the window jambs of the sacristy are of the eleventh century. So is the rough masonry of the choir aisles, badly coursed, with wide joints. Still more so are the miserable abortions of string-courses—mere horizontal scratches along the wall—the narrow pudding-bases, and the voluted capital. What seems to have misled Sir Gilbert Scott is that all the interior of the choir was remodelled or rebuilt, probably about the middle of the twelfth century. When the rich Norman nave was completed the builders may well have regarded the archaic choir with disgust. So they built an entirely new triforium and clerestory to the choir, and recarved every capital, with one exception only. In the same way at Romsey nearly every capital in the choir has been recut in the twelfth century. So also at Porchester, where the west doorway and most of the capitals have been thoroughly transmogrified. A still closer parallel is to be found on the south side of the nave of Rochester, where five bays of Gundulph's eleventh-century pier arcade remain unaltered—all the arches square-edged—on the side of the aisle; whereas they have been remodelled on the side of the nave. Here also, as at Hereford, the triforium and clerestory may have been wholly rebuilt. The conclusion seems to me irresistible that we have at Hereford large portions of the eleventh-century cathedral of Bishop Robert de Losinga.

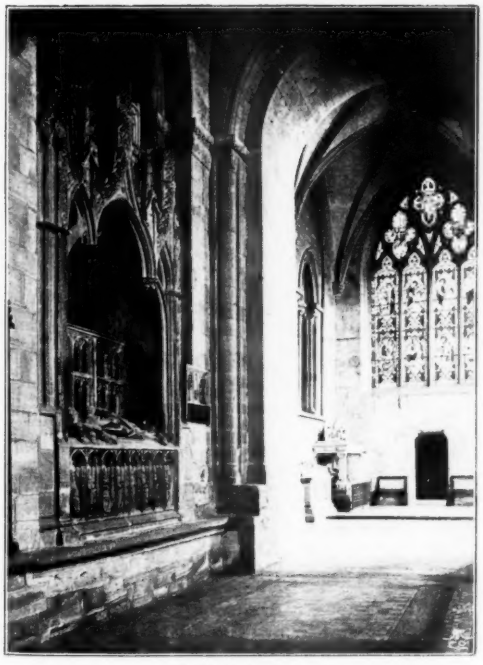
In some few instances mural inscriptions remain. But not even in these can we place implicit confidence. Mr. Barr Ferree mentions an inscription placed by the monks in the Chapel of the Holy Cross at Montmajour to the effect that it was built by Charlemagne. Yet their own archives state that it was erected and consecrated in 1019, as is clearly borne out by its architectural character. (The twelfth-century church of St. Gilles in Languedoc is also attributed to Charlemagne in a Papal Bull of the sixteenth century.) At Clee Church, near Grimsby, is an inscription let into a Norman pier to the effect "that this church was dedicated by Hugh, Lord Bishop of Lincoln, in the year 1192." As a matter of fact it was the choir and transept which were dedicated in 1192, whereas the nave, in which the inscription occurs, was erected some fifty years earlier. So at Castor, near Peterborough, the south wall of the chancel contains a mural tablet stating that the church was dedicated in 1124. But the present chancel is plainly thirteenth-century work.

So much for the inherent weakness and liability to misinterpretation of documentary evidence. But it may be asked, supposing that we consent to be guided by architectural evidence, by the comparative rather than by the historical method of investigation—can its conclusions be accepted without reservation? No; certain reservations must be made. They are, however, of minor importance. In the first place it must be remembered that there was not at any time a deal level in mediæval design; we must make allowance on the one hand for stupidity, on the other for genius. In mediæval building committees sometimes Moderates, Conservatives, Obstructives, sometimes Progressives and Radicals were in the majority. In the eleventh and twelfth centuries the monks were the Progressive and reforming party; as superior to the secular clergy in architecture as they were in learning, piety, and morals. In Gothic times the roles were on the whole reversed. The monks remained for the most part contented with their grand Romanesque churches. They had been bred in an atmosphere of

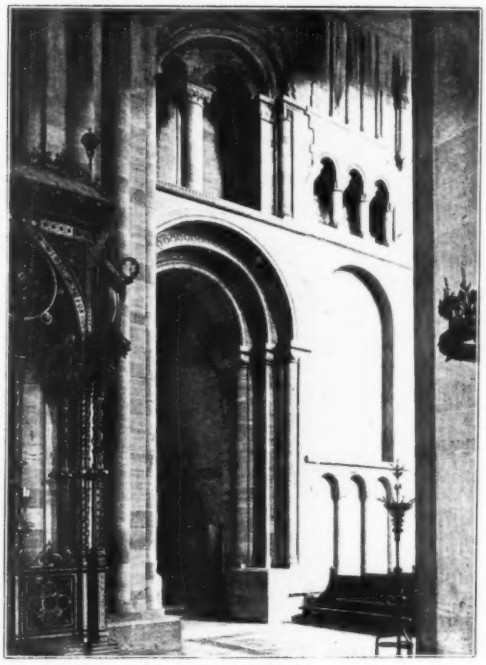


Sacristy.

Choir—North Side.



South Choir Aisle.



South Transept—East Side.

HEREFORD CATHEDRAL.

Romanesque; Gothic to them was an interloper and unwelcome. The monks of Peterborough and Norwich retained their Romanesque minsters almost unaltered to the last. On the other hand, the canons of Lincoln, York, Lichfield, and Exeter swept almost every trace of Norman work from the face of the earth. There is a remarkable difference in the work that was done by Bishop Fitz-Jocelin in the secular cathedral of Wells and the work that was going on simultaneously on the other side of the marsh at monastic Glastonbury. A certain allowance, then, must be made for the inherent conservatism of human nature, and especially for that of the monks of the thirteenth century. An amusing example of the conservatism—or shall we call it the pig-headedness?—of the monks occurs at the great abbey church of St. Germer, near Beauvais. It was evidently built well on in the twelfth century; and the designer was acquainted with the latest developments of architecture, *e.g.* with the work of Suger at St. Denis (1140–1144). He sees the constructional advantages of Gothic; he points the arches of the pier arcades and of the aisles to facilitate the vaulting; but not another pointed arch does he admit in the building. All the windows are round-headed; the arches of the triforium are semicircular, and enclose minor semicircular arches; and the chevron is preferred to the tooth ornament. Externally all is Romanesque; Romanesque so refined and beautiful—witness the corbel-table—that the work must be placed quite late in the twelfth century. The same is the case in Oxford Cathedral. Though it was built late in the twelfth century—it was commenced in 1158—choir and transepts are thoroughly Romanesque. The architect ignored—he could not have been ignorant of—the improvements of the Gothic builders—with one exception only. The transepts, as at Wimborne, are narrower than the nave and choir; and it was necessary that the four great arches of the crossing should rise to the same height. At Wimborne Minster the builders got over the difficulty by making the broad arches segmental and the narrow arches stilted semicircles; but at Oxford, as at Bolton Priory, a more scientific method was adopted: the broad arches were made semicircular, the narrow arches were pointed. There was even in some monasteries an inherited conservatism; the monks of Peterborough not only kept Gothic out of their nave to the last possible moment, but failed to provide their apse with an ambulatory till the end of the fifteenth century, and never vaulted their church. Of all monasteries that of Peterborough was the most unprogressive. Norwich too ranks high among the unprogressives; the monks did indeed eventually vault the whole cathedral, but only because fires in 1463 and 1509 burnt down the roofs of nave, choir, and transepts, and impressed on them the necessity of making the building fire-proof.

Again, there was one period—I think one only—the first half of the fourteenth century, when English architects showed some reverence for old work and refused to impair the effect of good old design. When they had to continue an older building—if it was of good design—they assimilated their work to that already in existence. If, then, because the clerestory has lancet windows we were led to believe that the eastern bays of the south side of St. Albans nave were erected in the first half of the thirteenth century, we should be much mistaken; they are a whole century later. So also, in the first half of the fourteenth century, Beverley assimilated its nave to the thirteenth-century choir and transept; Westminster did the same. Ely, though triforiums had gone out of fashion, built a big triforium, not to disturb the lines of the lovely presbytery. Carlisle carried the thirteenth-century arcade of the aisles round the east wall of the fourteenth-century extension of the choir. Other instances might be given. None of them, however, present the slightest difficulty to the archæologist. For the fourteenth-century builder kindly put his own trade mark on the detail. At St. Albans fourteenth-century rosettes replace thirteenth-century dog-tooth. Beverley and Westminster naves have the caps and bases of their own period. There are, however, two or three examples which rather closely approach what is called "architectural forgery." At

Rochester, late in the thirteenth century, the monks in rebuilding a bay of the triforium carefully copied the twelfth-century design. But, as they built in a different stone—greensand—the archæologist of the future would fall into no error. So in Durham Galilee; Cardinal Langley, in the fifteenth century, in adding two more shafts to each pier, copied exactly the earlier shafts even to the bases and caps; but he built the new shafts in stone, so that they cannot be confounded with the older shafts, which are in Purbeck

THE CHURCH OF OTTERY ST. MARY.

marble. The most remarkable example of "architectural forgery" I have met with is at Bristol, where the lower part of the great gateway in College Green was rebuilt, probably in the sixteenth century, in the style of 1150. Mr. Godwin says, "Although it presents a fair specimen of rich Norman work, and probably retains its original proportions and design, there are one or two minor points which are scarcely what we should expect to find in Norman work, and which, combined with the exquisite 'finish,' indicate the reconstruction of this gateway as among the latest ante-Reformation works in progress. Thus the hood mouldings which surround all the arches are not only of Perpendicular section, but at the

crown of the arch are mitred into the confessedly Perpendicular string-course, which is of the same section; whilst the jointing of the masonry in the south-western jamb is not continuous, but the outer order breaks joint with the other, and the courses are nearly double the usual height of Norman masonry; so that the so-called Norman gateway of College Green is no Norman gateway, but a Perpendicular restoration of the old work." Even in this extreme instance, then, there is plenty of detail to prevent the archæologist from misinterpreting the evidence of the architecture; there is no reason why he should go wrong in the rare instances in which a mediæval architect has not worked in the style of his own day.

One example there is, however, of belated design: it is the remarkable church of Ottery St. Mary, which can only be understood on the supposition that Bishop Grandisson's architect, who commenced it *c.* 1330, was a mediæval "crank" who went out of his way to bewilder antiquaries by designing the interior in the style of his own day, but the exterior, for the most part, in the style of the earlier work of the preceding century. Looked at from the outside, with its single lancet lights in towers and aisles, and its grouped lancets in east and west front, it has constantly been mistaken for a thirteenth-century church—that dedicated by Bishop Bronescombe in 1259—remodelled and enlarged by Bishop Grandisson. It is nothing of the sort. It is all Grandisson's work. The architect has amused himself by perpetrating forgery. Yet he has not left the archæologist without a clue. The lancets, for example, are not the lancets of thirteenth century church windows, but the narrow slits in the walls of such castles as that of Helmsley, Yorkshire. Ottery St. Mary, so far as I know, is a unique example of a church deliberately designed in the spirit of a bygone style.

But we may be misled not only by the stupidity and backwardness but by the precocity and cleverness of a mediæval designer. A designer might be *before* his time. He might be so much ahead of his contemporaries that no one would have anything to do with his work for a long time. This is borne out by facts. Generally any improvement in construction, in planning, or in ornament spread like wildfire. But there are instances to the contrary. Here and there a great original genius sprang forth, and the world was not ready for him. Such was Suger's architect at St. Denis, who gave the world fully developed and harmonised Gothic construction in 1140. Almost a whole generation passed before the Ile de France generally reached his level; nearly two generations passed before we produced the choir of Lincoln Minster. Or look at St. Urbain, Troyes. The date of it is certain, for it was commenced by Urbain, after he had become Pope, in 1262, on the site where his father, a shoemaker, had worked in his shop. Yet in construction and ornament it is a church of the fourteenth century; it represents the full and final consummation of Gothic architecture which other people did not reach for more than a generation. We have a most remarkable instance of precocious genius in our own country at Gloucester. Everywhere else in England, between 1330 and 1350, architects were designing in flowing lines: they were building Ely octagon, choir, and Lady-chapel; the presbyteries of Wells and Lichfield; Heckington, Ewerby, and Patrington Churches; the Percy shrine at Beverley; Edward II.'s monument in Gloucester itself. But the Gloucester masons were remodelling the south transept and choir of the Cathedral in the Perpendicular style. They had finished it even to the vaulting and glazing by 1350, for the glass of the great east window is not later than that date. We know of no other Perpendicular design till the work of Bishop Edingdon in his native church in Wiltshire and in the western bays of the nave of Winchester (1352–1361). The Gloucester masons, then, were nearly a whole generation ahead of their contemporaries. Most frequently the antiquary antedates his buildings; it is possible that sometimes he may postdate them; not so very often, however: precocity of genius never was very common in the history of the human mind.

With these and such reservations I believe that it is nowadays safe to rely primarily on architectural evidence. I will support myself by the authority of Mr. Barr Ferree, who has done so much for the chronology of the French cathedrals. "Fortunately," he says, "modern archæology does not depend wholly upon written records. The analysis of buildings and parts of buildings, the study of ornament and of constructional features, enable the modern student to determine the relative age of buildings within one group. This comparative study has thrown much fresh and valuable light upon the chronology of mediæval buildings." Still more emphatic are the words of Mr. Edmund Sharpe, who in his own investigations ever set architectural evidence first, and whose conclusions I have constantly found of scientific precision and accuracy. In alluding to the antagonism which not seldom arises "between the internal evidence furnished by the building itself and the external evidence of contemporaneous history," he says that "in the earlier days of archæological study the tendency was to discredit the former and accept the latter; in these days the results of strict analytical investigation and comparison of the minor details of the buildings of the Middle Ages dispose us to place much more reliance upon this species of internal evidence than on even the most unequivocal assertions of ecclesiastical historians. The inductive reasoning based on the former appears to be safer than the possibly hearsay testimony of the latter." Therefore, as I said before, study the architectural *before* the documentary evidence; and if the former conflicts with the latter, let the latter go to the wall. It may be objected that if the chronology of the cathedrals is in future to be based primarily on acquaintance with constructional detail and in particular with mouldings, every archæologist will have to serve an apprenticeship in architecture. That is true. The millennium will not be reached in ecclesiology till archæologists are architects and architects archæologists.

DISCUSSION OF MR. BOND'S PAPER.

Mr. H. L. Florence, *Vice-President*, in the Chair.

The Chairman read the following letter from the Bishop of London, addressed to the Secretary:—

Fulham Palace, S.W.: 18th November, 1898.

My dear Sir,—I am sorry that a previous engagement will prevent me from attending the Meeting of the Royal Institute of British Architects on 21st November. I am obliged to you for sending me Mr. Bond's very interesting Paper. Its main contention is that documentary evidence needs criticism in every case—and it is obvious that internal evidence supplied by architecture is one element in this criticism. The strength of this internal evidence grows by the continued application of the comparative method. It is much stronger now than it was thirty years ago. But I do not think that its results destroy the credibility of documentary evidence, but only teach us to interpret more accurately the exact meaning of the words, and discriminate between an exact and an approximate statement.

Yours faithfully,
M. London.

Mr. W. H. St. John Hope, M.A., who rose at the Chairman's invitation, said:—I should like, Sir, to propose a vote of thanks to Mr. Bond for his very excellent Paper. I have had the temerity, although I am not an architect, to write, and lately to re-write, the architectural history of one cathedral, and I have reviewed the architectural history of several others, for my own benefit and, I hope, instruction; and I am, therefore, very much interested in the subject which Mr. Bond has so ably expounded. Mr. Locke was good enough at my request to send me a copy of the Paper, in order that I might look it over beforehand. I do not go the length Mr. Bond does in criticising the opinions of our predecessors. It must be remembered that Professor Willis published his *Architectural History of Canterbury Cathedral*, a distinctly monumental work, in 1845, at a time when our knowledge of architectural detail, or capacity for dating buildings, was not so advanced as it is now. In the fifty years that have elapsed since that book was written, we have learned a good deal, and have been able to "stand on the shoulders" of Professor Willis and his school, and

to see a great deal that they were not able to see owing to their lack of facilities. I myself, for instance, have had an opportunity that Professor Willis had not of going through the whole of the account rolls and registers of the Cathedral Church of Canterbury; and when I tell you that the series of rolls of accounts is fairly complete from 1207 down to the Reformation period, and that the registers cover the same period, it will be understood that there is a great deal of matter in them that was unknown to Professor Willis, and that there are certain statements in his book that can be now revised. The interesting point about Hereford which Mr. Bond mentioned was pointed out so long ago as 1871 by Mr. Gordon Hills, but the story still goes on that Bishop Swinfield, and not Aquablanca, built it; and we are still being told that cross-legged effigies are Crusaders, that low side windows were made for confession or for the use of lepers, that the crosier is a cross, and that drains are subterranean passages leading from some impossible place to another. When these things get into print, it is most difficult to get people to hold what we should call the right view. I picked up only two or three days ago a perfectly new work and one of the first things I lit upon was a picture of a cross-legged effigy who was called a Crusader; and a chapter devoted to the symbolism of the cross, in which the crosier, of course, was a cross, and the actual crosier was a pastoral staff. In reference to the dating of things wrongly, as at Hereford, there is also a very curious example in connection with Canterbury, which points to one of those likes and dislikes referred to by Mr. Bond. Professor Willis has dated the nave of Canterbury as starting with a mandate of Archbishop Sudbury to the clergy in 1378; but in one of the registers is a list of subscriptions for that identical work which was made in 1369, in the time of William of Wittlesey, who has not been counted a benefactor to the fabric at all. Then we are told that Archbishop Sudbury built the two aisles; and we know from the heraldic and other evidence that the work was still going on at the close of the century, into Arundel's time and that of Chillenden. Yet in the *Kalendar of Obits*, one of the Canterbury books, it will be found stated, in connection with Chillenden, that by the wealth and help of Thomas Arundel, he, Chillenden, had totally renewed the whole of the nave, as well as the Lady Chapel. That was evidently because Arundel had given 1,000*l.* to it; but Richard II. had given 1,000*l.*, and so had Courtney before; yet Arundel, who was a great benefactor in other ways, poses alone as the rebuilder of the nave, which was probably begun soon after the 1369 subscription list, whereas Chillenden did not become Prior until 1391. There is a similar statement with regard to the central tower in connection with Prior Goldstone, who died in 1517, and is said to have built it; but the tower was actually begun in 1433, as we know from other evidence. With regard to a wrong reference to parts of a building, that is a matter in which we should deal kindly with our predecessors, because, as I have said, we have had advantages in reading things by the light of more recent learning, which was overlooked at the time. A case came under my notice a short time ago with regard to Winchester. There is an entry about the beginning and finishing of a new tower in 1200, which Professor Willis has expressed his inability to explain. He had previously made up his mind that the west front was flanked by two western towers, as shown by certain foundations underground to this day; but it did not occur to him that it was quite possible that, like other churches in this country, Winchester did not have two western towers, but only one; that in fact it resembled Hereford as it was over a century ago, and as Ely is to-day; and as Walkelin, the Bishop who planned Winchester, was brother of Abbot Simeon who planned Ely (and Professor Willis had already called attention to the similarity between the two plans), it is somewhat curious that he should not have thought of that fact also. Then it is very necessary, if I may speak from my own experience, to see what is the original text of so many of these statements. Mr. Bond has referred to the inaccurate statements of Wharton and others. Of Wharton's inaccuracies and omissions I have corrected a number myself. Only a short time ago I wanted to check some statements concerning the later work at Rochester, which Wharton had quoted from a chronicle in the British Museum. In collating these I found a remarkable passage, which seemed to be something quite new, to the effect that on a certain date, Bishop Hamo of Hythe, of Rochester, at the invitation of the Abbot and Convent, had gone down to Battle Abbey and consecrated seven altars. This seemed an interesting fact, and I wondered why I had not noticed it before. So I turned to Wharton to see what he said. He gives only one item in 1332, and says that many other things were done in this year by the Bishop, but they were of no account. It so happened that that particular entry is of great account, because one of the facts about Battle is that the church was undoubtedly built upon the site where Harold fell at the famous battle of Hastings; and you are shown at Battle a barren, rocky platform, said to mark the spot, beyond which are three crypts. If these are examined, it will be found that they are not of the Norman period at all, but that they belong to the fourteenth century. Now, as those three crypts each contained an altar, it is reasonable to assume that the chapels in the church above each contained an altar—that would make six altars; and just immediately to the west there must have been another large altar in the

church above, which would make the seven altars consecrated by Hamo in 1332. So we must not look to that particular platform for the place where Harold fell, but to another, some feet to the west, where the high altar would have stood. Everybody up to now has looked upon that platform as marking an important epoch in English history, which these little architectural features show must have occurred somewhere else. As to architectural forgery, there is a curious instance near at hand, though perhaps not very well known. In the north-west corner of the cloister at Westminster there is actually wrought out of the same block and at the same time an Early-English capital, as we call it, and one of the Perpendicular style; but both were done in the Perpendicular period and not in the thirteenth century. In connection with architectural forgery so-called, the re-use of old materials must also be borne in mind. An interesting example exists in the little church of Catterick, near Richmond, in Yorkshire. We know all about that church, because the contract for the building exists. I once went over the building with the contract in my hand, and compared the contract with what was referred to in it. In the church there were two windows that could not have been built at that time. The church was rebuilt in the fifteenth century, and these windows were of the fourteenth century, and there was nothing about them in the contract. The explanation was clear enough. The old church, which was on another site, was pulled down, and these windows taken from it and put into the new building in order to save money. That is an instance of a building appearing to be much earlier than we should think it was by the historical evidence. We must not neglect the historical evidence altogether, because the very early date, as Mr. Bond has said, of that beautiful fourteenth-century work at Gloucester rests entirely upon the statement of Leland, which is quoted from other chronicles. There is a precisely similar instance recorded by Matthew Paris. While Matthew was alive—and he must have been talking of what he knew—there was a certain Prior of Binham in Norfolk, a cell of St. Albans. This Prior went there in 1226, and left in 1244 to go to Tynemouth. Matthew Paris gives a list of the architectural works that he did before he went to Tynemouth, and one was that "he built the front of the church from the foundation to the roof." I happened to find that quite casually in looking over Matthew Paris's history before paying a visit to Binham, and naturally I looked for the building that the entry referred to, and to my amazement I found a beautiful geometrical front, of, I should have said, from 1270 to 1280. This was apparently the very thing that Matthew Paris said was built by a man who went away from the place in 1244. It must have been this part of the building, because the other end of the church, although it was in ruins, was not of that period at all; and here is this very fine front not only taking in the end of the nave, but the two aisles as well. In conclusion, I should like to ask a practical question as the outcome of this Paper, viz. whether the time has not arrived for a new edition of Rickman—I do not mean necessarily the book *Rickman*, but, using it simply as a name, we want a list of dated examples in architecture rearranged chronologically, and not by mere guesswork. Let us have the documentary evidence for a building; and the contemporary evidence—for I think it is very important that Professor Willis's term "contemporary" documents should be borne in mind, and that we should not have to believe the rubbish of Godwin and later writers, who, as Mr. Bond has pointed out, wrote of a period they knew nothing about. I think we might also very fairly now revise the architectural history of all our great churches. I have the material for doing Canterbury myself, and there are other people who have, no doubt, the same for other churches. The history of Durham can be largely re-written, because quite lately the whole of the account rolls, many of which I have read myself, have been gone through, and are being issued in print by the Surtees Society. Three points ought to be borne in mind in working out the stories of these great buildings. The first is the manner in which they were reconstructed. When the old men began to reconstruct an old church they generally began on a definite plan. If you take a series of plans like those so admirably produced in the *Builder*, and colour them all historically, blue for Early English, yellow for Decorated, and red for Perpendicular, you will be astonished to find what a number have a blue east end, and how the work goes along gradually from east to west. If the many historians who have written about Wells before Canon Church had adopted that principle, the whole thing would have been as clear as could be to them; for you have only to go over Wells to find that it was built in the regulation way from east to west; and having got to the west they began again at the other end. Then there is the question of lengthening the churches—why was that done? In some cases it was done on account of adding a Lady Chapel; but in others, I believe, it was done to permit the erection of the great standing shrines that were the ornament of so many buildings in this country. At Canterbury Gervase expressly tells us that the beautiful appendage at the east end of the church was erected to hold the shrine of St. Thomas. When the building was finished, with its lovely floor and everything else, they translated the saint's shrine into it. People at Canterbury often call that beautiful chapel the Trinity Chapel; but if you read Gervase you find that its proper name, the name by which it is always known in the records, is the Chapel of St.

Thomas, while the Trinity Chapel is that curious round one at the east end, and not the large one west of it. There is one last fact to be borne in mind, which is responsible for a great deal more than is usually attributed to it, and that is the pause made in building work in the fourteenth century owing to the Black Death of 1349. Professor Willis, writing of Winchester, is inclined to date the beautiful Decorated work of the Presbytery as 1320, and later; but if you look at the two eastern arches, with that lovely screen wall with niche work in it, it is evident that a pause of some considerable length must have occurred before they went on, and that when they did they worked in a more timid fashion. I am convinced that the date at Winchester must be put later than 1320, and that the work was stopped by the Black Death of 1349; and that it was after the Black Death, when they had sufficiently recovered themselves, that they rebuilt the arches of the presbytery, though they had not recovered enough energy to build the aisles with them. There are a number of other instances that might be quoted in support of this, and it is interesting to note, too, that this period agrees with that conservative one which Mr. Bond mentioned as being in existence in the fourteenth century.

Mr. WILLIAM WHITE, F.S.A., [*F.*] in seconding the vote of thanks, remarked that he was glad that the lecturer had given such good reasons for depending so much more on the architectural evidence than on the documentary or the traditional. There had been numerous instances of conflict of opinion with regard to the dates of buildings, and he had found that antiquarians and historians would not only depend upon the documentary evidence, whatever it might be, but set aside and spurn the architectural evidence. Comparatively few antiquarians knew enough of architecture to draw the deductions that had to be drawn from architectural evidence. He held strongly with the lecturer as to the structural evidence in establishing chronology. The Galilee of Durham was one of the most remarkable instances of that. According to the documentary and traditional evidence, Bishop Pudsey built it as a Lady Chapel. But the architectural evidence pointed positively to its having been built by Bishop Pudsey for his court of judicature, when he was appointed King's Commissioner with the King's writ. This evidence was so clear that he could not understand why it had escaped analysis so long. Coming from the nave of the cathedral through the western portal into the Galilee, there was a Latin inscription over the door calling attention to the righteous judgments to be passed there; and then there was the altar of Our Lady of Pity, which tradition said had its original reredos. The reredos, it was true, was of Pudsey's date; but what was the reredos? It could not have been a reredos to an altar; but it could have been at the back of a seat of judicature, because there was evidence relating to that, and this painting at the back of the reredos was the painting of a curtain, with a handsome broad decorated band across the spring of the arch. Further, on the jambs on either side there were figures of the King and the Bishop, representing the combined authority of the King and the Bishop—in this Court the Bishop being not only the King's commissioner, but Bishop and Prince Palatine as well. That was a remarkable instance in support of Mr. Bond's principle of appealing to the architectural evidence. Then again as to the name—the Galilee. What did it mean? There could be no question about it. It was sometimes called the Galilee of the Gentiles—that is to say, it was outside the cathedral; it was the outer court of the cathedral, like the outer court of the Gentiles at Jerusalem, which was accessible to all alike, and not simply to the parties in the ecclesiastical causes tried there. There were several traditions as to the reason of the name, the guide-book stating one to be that when a monk wanted to see a female friend she was told "He has gone before you into Galilee; there you shall see him." To give that as a reason why the Galilee should have been built as it is, is simply ludicrous. There were several instances of the documentary coming in conflict with the architectural evidence, and giving rise to misconception, even at St. Albans. The eastern bay of St. Albans had an original Norman corbel-table which came in line with its Norman roof. It was constructed with the same brick, with the same mortar, and with the same workmanship as the work below it. The clerk of the works (acting probably by authority) had it removed, and the modern fourteenth-century corbel-table carried on up to the tower; and he repudiated the idea of its having been the original corbel-table, pointing to the historical evidence that the wall was raised seven or eight feet in the fourteenth century! But where was there a sign of that? If it were put on the top of a wall raised seven or eight feet in the fourteenth century, what became of the clerestory window below it? There was, again, no sign whatever of there having been such an alteration.

Mr. H. HEATHCOTE STATHAM [*F.*] desired to draw attention to two points with regard to the subject. He was entirely in agreement with most of what Mr. Bond had said, but they ought not to forget that, after all, it was originally from documentary evidence that they got the basis for following the history from the architectural evidence. Imagine a man from another planet put down before the Gothic monuments of England, and told to work out their history. He could no doubt, after some attention, trace the succession of styles; he could make out that the

round arched Gothic came before the pointed arch, and so on; he would very soon find out, probably, that the Perpendicular was the last, and so forth; but he would depend upon documentary evidence for getting precise dates. It was something like surveying; they could triangulate all over the country, but they must have the measured base-line to start from; and the chronology of styles could not be worked out unless there were some precise dates to start from. Then the two reacted upon each other. Full value should therefore be given to documentary evidence in the first instance, for we could not have begun without it. Mr. Bond, however, had ably shown that there were places in which the architectural evidence was more reliable. Mr. Bond began by a reference to a controversy that sprang up a little while ago—it was in fact a revival of a controversy that had been going on for many years about Waltham Abbey. That controversy interested him (the speaker) very much, and he spent an afternoon in studying Waltham Abbey in connection with the correspondence on the subject, and he came to the conclusion that the theory that Harold built that nave was absolutely untenable. Yet there could be no doubt that Harold did build an abbey church at Waltham, and the argument of Freeman and others was that it was most improbable that the Normans should have pulled down that church after it had only stood a short time, to build another on its site. But the facts proved absolutely that they did do so; and that fact it might be important to bear in mind in considering other cases in the history of buildings. One could not argue safely that people could not, or would not, possibly have pulled down such-and-such a thing, when it is proved that they did so on an occasion when it would have been thought very unlikely. And that argument might be applicable in other cases. He should like to join his expression of opinion as to the very great ability and interest of the Paper they had listened to that evening.

Mr. E. W. HUDSON [*A.*] desired on behalf of the Associates to express their gratitude to the reader of the Paper for the most interesting, elaborate, and important discourse they had had the pleasure of listening to, and, he should also add, for the beauty and number of the views that they had looked upon with so much pleasure. He had intended to say a few words with regard to the universal application of the principle of combination of documentary and ocular evidence, not only with regard to English cathedrals, but also with architecture and antiquities generally; but he would refrain from doing so at that late hour, and make what few remarks he had to make in writing to the Secretary if he should think them worthy of space in the Journal.

Mr. BOND, in reply, said that he came before this learned Society with his maiden paper in great trepidation, and he was only too thankful that he had escaped their criticisms so lightly. He might, perhaps, say a word or two with regard to some of the remarks which had been made. There was a still more remarkable example than Waltham, and that was the extraordinary craze which represented Oxford cathedral as largely the work of the Saxon King Ethelred and as having been built in the year 1004, which occupied nearly the whole of the most recent guide-book, and was probably the largest mare's-nest in archæology. With regard to what Mr. White said of the Galilee, he could not go into the question whether it was a Lady Chapel or not; but certainly before 1186 there was a grant made in which the phrase occurred: *Sub altare beatae Mariae in occidentali parte ejusdem ecclesiae quae Galilea vocatur;* so that there was an altar of the Blessed Virgin in the present Galilee chapel pretty early. Why it was called the Galilee nobody seemed to know. He had an idea that a large amount of half-ecclesiastical and half-secular business went on in all the great churches; it was somewhat secular for instance, to pay tithes, and it was not altogether ecclesiastical to get married. Part of the ceremony of getting married, and the whole of the ceremony of paying tithes, was conducted in some part of the church, which, if not the Galilee, formed a sort of semi-sacred part like the Galilee. And that was the reason, he thought, why our cathedrals and parish churches had such enormous porches. Wells, for instance, where the west portals were little better than rabbit-holes, not being able to build a Galilee, had to build a large north porch. On the other hand, in French cathedrals, the west portals were on a huge scale, and there the porches were omitted very often. That looked as if the porch might be a substitute for, or used in a similar way to, the Galilee. That was mere conjecture. Mr. St. John Hope's remarks were, as usual, of the greatest value and from original sources. One reason why the churches were enlarged so much in the thirteenth century was, as had been the case at Canterbury, that, whereas many shrines had hitherto been kept in crypts, at that time there was an enormous increase of saint-worship as of mariolatry, and the crypts became unable to hold the hundreds of thousands of pilgrims who came to them to look at the relics and say a prayer before them. For instance, though Canterbury crypt was such a vast one, they had to remove the shrine from the crypt to the floor of the choir above. The increase of pilgrims was, then, one reason why the churches had to be enlarged so much. Wherever there was a first-class saint—for instance, St. Ethelreda at Ely, St. Hugh at Lincoln, St. Chad at Lichfield, and St. Cuthbert at Durham—or where they could manufacture one—they made a Scotch baker at Rochester into St. William of Perth—there they had such crowds of pilgrims and such

a wealth of offerings that a great extension followed at once in the shape of a Lady Chapel, a retro-choir, or an eastern transept. Mr. Hope's reference to the Black Death was interesting and important. As he had pointed out in the Paper, the Perpendicular was started at Gloucester when everybody else was doing Curvilinear work, which was a much more beautiful thing, *e.g.* at Ely. The question is, why did the fourteenth century give up this beautiful style of its own, and adopt the more or less debased style (following the words of the common handbooks) of the Perpendicular—why did they give up the good for the bad? They gave it up because it was cheaper to do a large building in Perpendicular than in the rich and lovely style of the Ely Lady Chapel. The reason why their artistic instincts had to be violated was that the Black Death had made every one so short of money; otherwise people might have gone on with the Curvilinear, as they did in France; they would never have had the Perpendicular, but would have gone from the Curvilinear to the Flamboyant, which had been well described as Curvilinear gone mad. In conclusion Mr. Bond expressed his obligations to the Rev. F. B. Dickinson, Ottery St. Mary; Alfred Watkins, Esq., and J. Hartree, Esq., Hereford; and R. H. Murray, Esq., Worcester, for the use of photographs and lantern slides.

Mr. E. W. Hudson [*A.*], in accordance with his proposal expressed at the meeting, writes:—

In reviewing the errors, unjustifiable deductions, anachronisms, and forgeries referred to by the reader of the Paper, an architect would probably be forced to exclaim, "Who is sufficient for these things?"—sufficient to arrive at a wise judgment upon the date, origin, or designer of a given building, or part of a building, of ancient date. So multifarious are the points to be taken into account, that a modest antiquarian may well share such a feeling.

The comparative value of documental and ocular evidence, so ably put before the Institute by Mr. Bond, has, I feel sure, a far wider application than merely to English cathedrals; and I suggest that it applies to all antiquarian research. Archæology is not an exact science, and in no other perhaps is greater divergence of opinion to be met with. To enter upon an investigation biased in mind, or determined to find a preconceived result, is often a characteristic of the antiquary, and it generally leads to erroneous conclusions. If we only kept an open mind it would prevent wrangling in trying to maintain an impossible position, or the mortification of finding one's "Roman inscription" to be only a boundary stone of modern date bearing the mark of some contemporary Wm. Stumps!

In observing and comparing records with actual work, it is wiser to avoid all dogmatism, and to maintain a modest reticence in suggesting deductions from the evidence obtainable.

Ancient documents may often help, but, nevertheless, are as often misleading, especially if carelessly consulted and not compared with the building to which they refer.

To take a notable instance. The authority of the Venerable Bede, living in the north, connected with the Northern Church, and reliable to a great extent as to its history, must be open to considerable doubt when he refers to ecclesiastical events in the churches of Kent and Wessex, for he would write from hearsay; whereas Gildas, being a southerner, is more reliable in regard to the southern churches, for he wrote from local knowledge, and as one living in their neighbourhood.

In drawing inferences even from contemporaneous documents much judgment is required. Take, for instance, those that inform us of an event in the life of Chaucer the poet, viz., his appointment as clerk of the works to Richard II. in 1389. It would be a mistake to assume that he was ever to be seen examining materials or checking day-work accounts at Windsor Castle, or setting out tracery, as we may be sure would be a correct surmise in the case of the practical man, Wilars de Honecort. Chaucer's only drawings would be the emolument attached to his office, and his work was no doubt done by a deputy.

Early writers are carelessly copied or translated by later ones, are added to, and fancifully paraphrased, often without any acknowledgment. Even in modern times, when the remains might be examined, writers content themselves with repeating the opinions of their predecessors, and often apply them to the wrong building. I have mentioned a case where a note of Fitzstephen to a London relic has been applied by an annotator to another two miles away, and Fitzstephen has been assigned a period in the seventeenth century, five hundred years after his death! *

Mr. White has mentioned the value of inscriptions upon buildings, as at Durham Galilee. Antiquaries of repute sometimes make very erroneous assumptions in reading these, *e.g.* Mr. Grose, examining an undated slab in Lincoln Cathedral, found the words, *Richardus quondam Episcopus Lincolniensis*. He at once assumed it to indicate the sepulchre of Bishop Richard Gravesend, and wrote that he died in 1279, whereas the fact was that this prelate was translated in that year to the see of London, lived till 1303, and was buried in Old St. Paul's. The stone, therefore, was but a memento of his tenure of office, or else referred to a previous or subsequent bishop of the same name.

It was unwise to base a great theory upon two or three isolated words, as was often done. The practice of seeking to antedate a building, and

* R.I.B.A. JOURNAL, 3rd Series, Vol. V. p. 237.

to seek novel and extravagant explanation for some feature in an ancient building, had latterly been in vogue. Two or three suppositious examples would bring us to the *reductio ad absurdum*—*e.g.* the pointed arches at Arpino being the work of the Crusaders; the raised terraces of Mexican temples being copied from Birs Nimroud, and the work of Assyrians after a successful invasion of the country; the existence of pointed arches and Early-English-shaped lintels in the Palace of Diarbekr, in North-West Assyria, indicative of an occupation of the country by us 900 years after erection. Many others suggest themselves.

It would seem, from the investigations in progress by the Society of Antiquaries, and those of the reader of the interesting paper we have listened to, that a higher criticism is being applied. Still, it is not likely that the valuable work of antiquaries of the last and present century will ever be underrated. We owe them a deep debt of gratitude for what they have put on record, and their opinions are worthy of all respect. Then it is pardonable that French antiquaries should wish to prove that Saint-Front of Périgueux was the prototype of St. Mark's, Venice, and not *vice versâ*, and one might patiently consider any evidence offered. Sometimes a far-fetched theory is correct. Mr. Tavenor Perry once gave us an instance.† In the Cathedral of Lund, in Sweden, there are details and evidences of eleventh-century work which resemble those found in an English church at Dinton, in Buckinghamshire.

Now it is most unlikely that a Martian projected upon our planet, in the way suggested by Mr. Statham, would, even if he happened to notice this resemblance, conclude that both buildings were designed by the same architect (Donatus by name); and yet I understand that it is so established by documentary evidence, which in this case throws light upon the ocular evidence, and practically sets the matter at rest.

It is very much by mouldings that we seek to fix dates; for Mr. Bond has shown that general arrangements of a century earlier were occasionally maintained by cathedral architects. Yet it seems they were also given to freaks of working in a past style, so that great care has to be exercised before a decision is arrived at. Then, there are cases in parish churches where the nave piers and aisles are later in date than the clerestory wall, for when the single-cell building became too confined for worshippers, aisles were added, and the original outer wall cut through for piers and arches; hence the spandrils and superstructure are considerably older, and are not to be confounded with the lower work.

Heraldic devices and rebuses are of great utility in fixing dates and names of founders. Dilettante writers often get astray in the matter of dates. During the Gothic revival, the *Quarterly Review* made fierce attacks upon Sir G. G. Scott's work, and fell foul of the altar-screen in Westminster Abbey. Sir George merely said one evening at the Institute, "He should not say anything in defence of the design, he considered it very beautiful, and it was erected *temp.* Henry VI.!"

It has been said that the Royal Institute is too much given to antiquarianism. I will not go into the question, but I feel sure, if there had been more architects in the antiquarian camp, there would have been less work for the new criticism.

What might I not say as to the difficulties of future antiquaries in dating work of the nineteenth century! The passing generation has been dubbed "clever forgers," and it is possible their work is so true that it might be taken for that of the thirteenth and fourteenth centuries. But in regard to that of the last quarter, I think there is less fear of mistake, as it affects the Perpendicular style, which Mr. Bond does not seem to hold in great esteem. Certainly, the weak mouldings, the tracery—"curvilinear gone mad" it sometimes was rather than Perpendicular—battlemented churches, with effect of "streaky-bacon" aspect in red and white, samples which one regretted to see, might be trusted to attest to the beholder, A.D. 2500, that it was not contemporaneous with the work of Bishops Fox, Bird, Edington, or Wykeham.

As to some of the Flemish Renaissance of civil and domestic buildings, I think the typical New Zealander foreseen by Macaulay will not trouble to investigate it.

The moral of Mr. Bond's Paper seems to be, to take no authority for granted, to approach inquiry with open mind, and after thoroughly comparing documental and architectural evidence, and weighing discrepancies judicially, to deduce results modestly and without dogmatism, so that, as far as possible, the truth may be ascertained.

† Swedish Architecture, vol. vii., TRANSACTIONS R.I.B.A.

METAL-WORK.*

By T. Swaffield Brown,
Master of the Art-crafts Guild, Sheffield.

THIS is rather a large subject to handle within the limits of a paper; but it is one which, in the present position of art affairs, needs careful attention, because we are, as it were, at the parting of the ways. One is being advertised by the dilettante contributor to the so-called "art" press, who as a rule knows very little about it; another by the archæologist and antiquarian, who wants us to go back to the early, or the middle, or the later centuries, whichever he happens to know most about; another by the manufacturer, who wants to lead us to where he can make most money, and perhaps dubs himself an "art designer and manufacturer" for plausibility; and yet another by the "art" crammer, with his red-taped track and his "authorised programme." And so on until the only thing we are certain about is that there is a moving, awaking spirit abroad amongst us, awaiting guidance, and that upon the wisdom of that guidance depends the future of English art work in metal, if not in all other materials; and if we remember that such work in the aggregate reflects the national life and character, and, separately, is the outward expression of its maker's inner self, we must see that the present condition of affairs leaves much to be desired. I have chosen to talk about metal-work on this occasion, not only because I know something about it, and that it is the principal concern of this city, but because architects are the people of all others to whom the great, ignorant public—or rather those who feel the need of guidance—look for that guidance.

And rightly so. Considering the relation of architecture to most of the other arts, its professors are, or ought to be (by reason also of their training in the knowledge of those principles and laws which are the foundation of all good and beautiful work, whether it be the building of a palace or the making of a candlestick—it is but a question of degree)—I say they are, or ought to be, the natural leaders of the public taste.

It is ignorance of principles which constitutes the most serious danger in the modern revival of "art metal-work," as it is called; and the only remedy that I can see is the creation of a more intimate relationship between the man of principles and the man of practice, as a means towards the better understanding of both by each.

If right principles govern the craftsman's thoughts and direct his special skill, we shall get good work (especially if the two qualities exist in high degree in the worker); and if to them be added that indefinable faculty called "sentiment" or "feeling," the sense of beauty, we shall get *beautiful* work; not otherwise.

The modern distinction between "art metal-work" and other, as generally used, is entirely illusory and mischievous. Illusory, because it is founded upon a misapprehension of the nature of art. Art is a spirit (according to the Bible, the spirit of God),† and not a trade quality. It may exist in the humblest and simplest work of the village blacksmith, in greater degree than in the silver candelabrum or the gold casket (as a matter of fact it often does): neither high elaboration nor unfamiliar form necessarily indicates its presence; nor its absence, absolutely. It is a question of degree, not of kind. You never speak of *pictures* and *art pictures*, but of good and bad pictures. It is mischievous because it tends to become real, separating art from common uses, and making it a "speciality" instead of cultivating it as an all-pervading influence.

As a matter of fact, "art" is being made a stalking-horse for the winning of money in this way. I need scarcely say to this audience that the use of art—of design—is not the making of money primarily, nor the illustration of ancient history, nor the display of literary skill, nor the winning of medals and certificates; but the exaltation of men's lives. I cannot go into the morals of the question here; but, truism as this is, it is often overlooked.

Metal-work includes a very wide range of material and purpose. To this latter belongs the distinction between ecclesiastical and domestic art. The only difference in the past was due to the requirements of its purpose. The material was the same, the workers the same, and the prevailing style was the same; but in past days men's religion was a part of their lives and influenced their work, and no doubt the work for the sanctuary, the visible symbol of their faith, was more lovingly elaborated than that for use in domestic life.

But I do not propose to go into historical retrospect more than by casual reference. It has been done in volumes by the historian and the archæologist, and you probably know all or more about it than I could tell you. The work of the past is incalculably valuable in its teaching, but unfortunately much of it has been neglected and lost sight of, and only its outward and visible results have been made use of as patterns for reproduction. But these were the expression of the thoughts and impulses of their makers, and what we want is the expression of the thoughts and impulses of our makers. It was done as well as their means enabled them to do it; we want ours done as well as our means will allow us to do it. Our material means are as ample as theirs at least, but are chiefly devoted to copying what

* Read before the Sheffield Society of Architects, on November 8, 1898.

† Exodus xxxi. 3.

they did, with all its accidents and crudities, instead of being applied to the realisation of its principles.

For it should be remembered, in connection with ancient work, that it was executed under conditions widely different from those under which we live. For long periods there was no settled feeling of security. The church and the home were—in different degrees—alike fortresses, fitted for the stress of warfare and the possibilities of defence rather than the enjoyment of such comfort, and even luxury, as have now become matters of course with us. And the character of their work reflected these conditions.

So that we should use our study of the past as a backsight to assist us forward, and only so, because otherwise, if we work back to it and merely copy it, we shall only produce anachronisms and incongruities. We shall stultify our skill, and record indisputably—and more or less accurately—to future generations, our utter sterility of imagination, if not our want of common sense.

I have made these remarks so that you shall not think that in what I have to say I am insensible to the beauties of old work: I am not, but keenly sensible to many which lie deeper than the surface; but I am the more concerned with the new, that which we have to live with (some of us by) in the present, and to be remembered by in the future.

It is curious to reflect that, through all the centuries and in these days of startling discovery, the metals used generally in the arts remain substantially those used in the remotest antiquity, *i.e.* iron, copper (and its compounds, bronze and brass), silver and gold, with lead, tin, and in some forms, zinc. Platinum, aluminium, and many others have been discovered, but their use, in this connection, is too limited to affect this generalisation. Nickel is an exception, but its discovery and use has done little but mischief in its common form (combined with brass as German silver)—I will mention presently how and why.

PRINCIPLES.

The principles which govern the choice of material and the degree of elaboration to which it should be subjected are simply and precisely those by which we regulate, or ought to regulate, all our other affairs, and may be summed up in a very few words: fitness for purpose, and sincerity.

For instance, iron is the strongest, hardest, lightest, and least costly of the metals used in this connection. Therefore it should be used wherever these qualities are of greatest importance; but it is practically black, and extremely liable to destruction by oxidation or rust, and it must be worked at a great heat. These are limitations demanding that its design be simple, exhibited in lines rather than broad masses; that its arrangement of foliation or other features should furnish as little lodgment for moisture as possible; and that it should be capable of being wrought rapidly.

In its cast form it is brittle, liable to fracture either by violence or other causes, such as extremes of temperature; its character can only be that of the material in which the original pattern is made, and that much marred: if these qualities indicate suitability for any purpose, to those purposes it should be confined.

Copper is tough though soft, beautiful in colour, heavier than iron and much more costly, extremely ductile and malleable while cold, hardening under the hammer. It cannot be cast, except by the addition of an alloy. With about 10 per cent. of tin it becomes bronze; with about 25 per cent. of zinc it becomes brass. In these three forms, however, we find very different qualities. As fine copper, its toughness—untearability—points to its utility in the form of plate for purposes which require considerable tensile strength and complex form, such as large vessels for holding liquid. Its malleability renders it a fit material for embossed work, especially in exposed positions, in which it is quickly protected by a brown patina which forms upon its surface.

As bronze it is much harder, more costly, very imperfectly malleable. Its great limpidity in a state of fusion, however, and its beautifully coloured patina, render it peculiarly suitable for some purposes, in which the hammer is out of the question—such as the casting of statues, bells, &c., to which uses it is practically now confined.

As brass it is less costly, and the most brilliant in colour of all the baser metals. Fairly malleable and ductile, strong, but liable to become rotten all through its substance if allowed to get corroded, and consequently needing to be kept bright, it is the metal to use where brightness of aspect is an object. It is capable of being embossed; but as its beauty is only or chiefly to be developed and preserved by polish, it is not suitable for delicate elaboration, but rather for breadth of undulatory surface, the design being worked out in brilliantly reflected light.

Silver and gold, heavy and costly—gold nearly twice as heavy and thirty times costlier than silver—are the precious metals, precious not only intrinsically, but because of their qualities; beautiful in colour, inodorous, tasteless, incorruptible, and susceptible of elaboration to the highest degree of refinement, are naturally the materials for precious purposes—for sacred vessels and symbols, for the higher domestic uses, for personal adornment, for insignia of rank or degree, for all intimate use and personal contact.

These being the principles of selection of

material, the next principle, the great one of good craftsmanship, is "Sincerity."

Whatever the material and the work *is*, *that* it should appear to be. Whatever purpose it is to fulfil, its design should fit it for, and point to. Whatever the character of the material may be, its manipulation should develop and not destroy it.

Consciously or involuntarily actuated by these principles, and hammer in hand (not in the drop stamp), the smith will do good work whether he thinks he is doing art work or not; and without them he will *not* do good work, even if he thinks he is doing *art* work.

And now as to means. The chief, the archetype of smiths' tools, is the hammer. "By hammer and hand," the adage says, "all things doe stand;" and only by it, controlled and directed by heart and head (that is, by will and by skill), can his work stand.

The effect of a hammer stroke can be got by no other means. The hammer is a part of the man who wields it, and the instrument through which his imagination or feeling finds expression; every blow has a subtle bias, perhaps unconsciously given, which aids that expression; and as soon as you begin to substitute mechanical work for imaginative, you throw away the substance for the shadow, the living thing for the dead body; you discourage skill, and lower the value, the mental and moral status, of the worker. Handwork owes much of its charm to effects which spring spontaneously from various causes, physical and mental, perhaps in the quality of the metal or the condition of the temper of its worker, but which give individuality to every curve, or frond, or boss, which often lead to fresh developments hitherto uncontemplated; and so the work gains variety without departing from the general intention or impairing the utility of the object.

This touches the questions so often discussed, of machine-work *versus* hand-work, and "When does a tool become a machine?" Well, I think a tool becomes a machine as soon as it is taken from the hand of the living man, where its direction and force is subject to the slightest variation of his will, and made the instrument of involuntary and unsentient energy, in which position it may only be employed legitimately for the doing of labourers' work, the putting of material into convenient form for elaboration by hand, and thus saving the expenditure of much human energy without superseding human art.

In the actual working of the metals there is little difference of process, the greatest being that iron, speaking generally, must be wrought while hot, and all the others can only, or better, be wrought cold (although heat is necessary in some stages of the work). For this reason I shall deal chiefly with iron and silver, because silver processes are fairly representative of those of the other metals.

IRON.

Iron, as you all know, is, through its possession of the qualities I have mentioned, a metal of very wide and varied use. In its wrought form, its great strength and hardness fit it especially for the defence, security, and protection of more precious things; and for other purposes, involving power of resistance to force; and its stern aspect is in keeping with such duties. But for all that it may be made exceedingly comely under proper treatment, and the docility with which it submits to such leaves no excuse for its neglect.

You have been spending a large amount of money in wrought-iron work for tramway purposes, and what have you got for it? Wrought iron, yes, of a sort, but one pattern to every detail repeated every forty yards, I believe, to hundreds. (I suppose now, if you were to substitute for these, beautiful golden angels, with jewelled crowns on their heads, and hands outstretched holding the wires which, you think, are to be such blessings to the city, your admiration of the first would be turned into scorn or indifference very quickly by their palling uniformity of expression.) Well now, if these are wrought by hand, each might have its own character, or, at all events, you might have had a considerable variety—it is done in some places—without adding to the amount of work fixed by the proposed expenditure. Some would be better than others, some probably bad; but you have discords in music sometimes which are useful.

The process of working is simple. Forging, bending, and welding are the principal operations. Forging is the creation of the desired form by hammer-strokes out of the rough material; bending explains itself; and welding is the joining of separate parts by hammering them together at an intense heat. This method is peculiar to iron-work, and by succession or combination of these operations the whole work is done. Its results are most familiar to us in the form of screens, gates, door-hinges, &c. As its dark surface reflects but little light it is generally seen *en silhouette*, therefore its design should be clear in outline and its details very distinct. It is worked in fits of heat which rapidly subside, therefore its detail should not be dependent upon prolonged elaboration for its effect. Welding heat is apt to become destructive, "burning" the iron and impairing its strength, therefore welds should not be unnecessarily multiplied, especially between parts of unequal thickness. Ties and bolts often become pleasant features in the design, making decided little breaks without disturbing or obscuring the lines on which they occur.

Foliation is a difficult subject to deal with. In the form most generally used—that of an acanthus

frond partly enveloping the stem upon which it grows—I think it entirely out of place. All foliation on this class of work should be in a vertical plane or approaching it, and kept as clear from the stems as possible, not only because otherwise it blurs the lines of the work, but because it becomes a fruitful source of mischief unless very carefully dealt with.

For instance, upright husks surrounding a central spike, unless kept open at the bottom, catch the rain and dew and store it at the root of the spike. A leaf clasping the lower curve of a volute, or in many other situations, does the same. In each case a little laboratory is set up, and commences operations at once for the conversion of good iron into rust, which for our purposes is destruction. Witness the new gates at Weston Park, and the new electric traction posts. The old gates of the same park, though much smaller and less pretentious, are good in design, and all these principles are in force in them, and it is perhaps hypercritical to suggest that they would have been better with more ties and fewer rivets; but at all events they are now in better condition than the new ones.*

All the greater curves should be designed to make contact with others or bars, and should be tied at that point as often as possible. Two curves of weak structure become strong by mutual support when so treated.

Of course these considerations do not apply with equal force to chancel screens, gates, and grilles, and such interior works, which are not subject to such destructive influences nor seen in the same light as out-of-door work; but the same principles and processes govern their construction.

Different conditions come into play, again, in such work as hinges and clamps for doors and chests. Here the iron-work is carried and kept in position by the wood, which it protects, strengthens, and adorns. (I do not forget that the hinge really carries the whole thing, but I am speaking of the ornamental development of the outer clamp.) The governing conditions are the gradual distribution of substance from the points of suspension, the necessary positions of the holding bolts, and the flatness of the surface, which it must closely fit.

For these and similar purposes the work should be hammer-finished, not only because the hammered surface is most durable, but because it is most expressive of the character of the material and the method by which it is worked. At the same time, in avoiding the seductions of mere smooth *finish*, as it is called, we must not allow ourselves to be deluded into the idea that rudeness is a virtue *per se*, and exaggerate it purposely, as is frequently done now.

But under other circumstances it may be quite necessary to give higher surface finish, as in locks, keys (and, in the past, body armour), which its great strength makes it the most fitting material for. Here its susceptibility to high elaboration is a useful quality. It may be chiselled, embossed, twisted, filed and ground, and damascened.

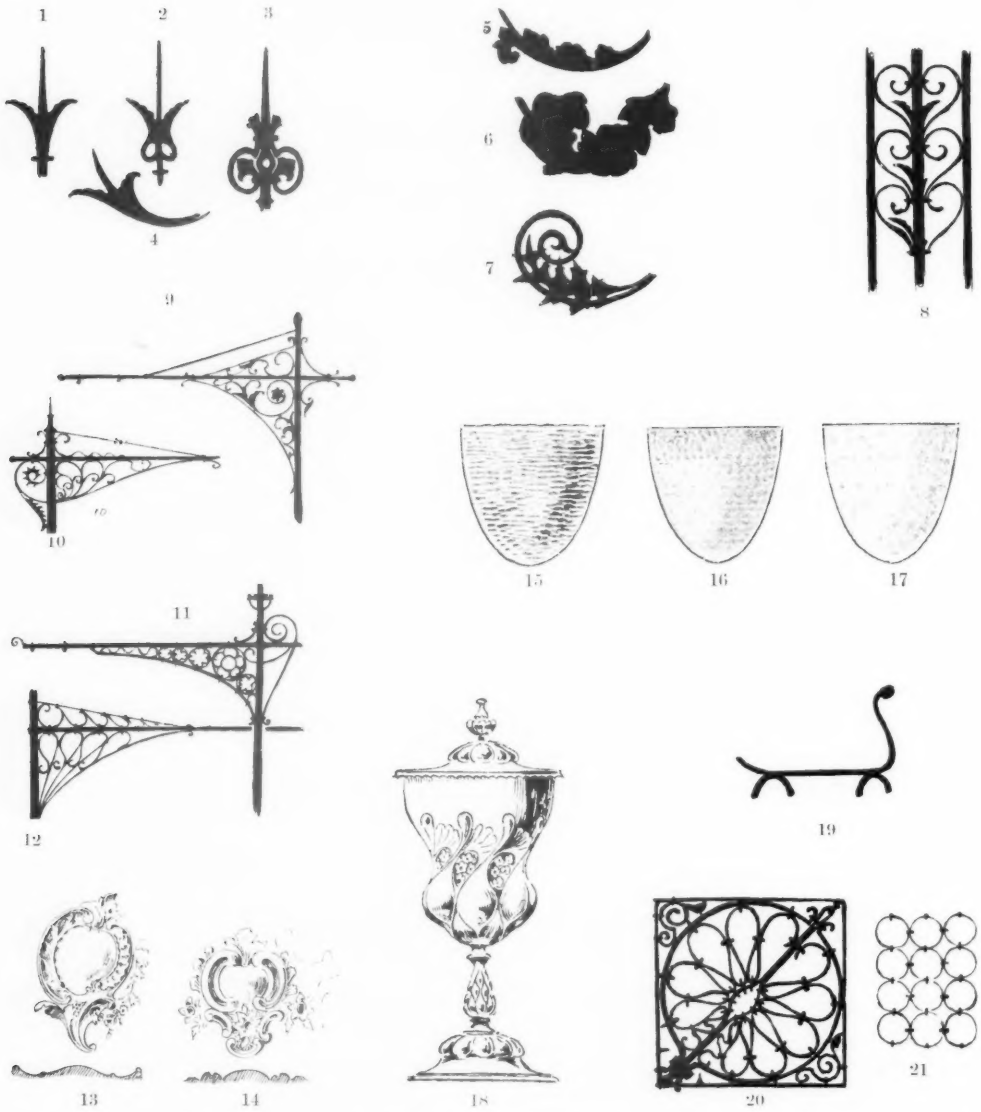
This mode of surface decoration is a very tedious and delicate one. The lines of the design are chiselled or graved very deeply; gold wire or plate is then laid in the grooves and hammered; this drives the gold in, and brings the edges of the groove partly over it and locks it in. This process is seldom practised now; but another and easier one is the etching of the *ground* away by acid, and burnishing very thin gold upon the raised lines while warm. This process makes work which is extremely liable to damage; the other cannot be injured by any means short of the destruction of the object decorated.

Silver and gold, although differing widely in weight and value—gold, as I have said, being nearly twice as heavy as, and thirty times more costly than, silver—I propose to deal with together, because their processes are the same, only differing in scale from each other and from those of other cold-worked metals. In their pure state they are extremely ductile and malleable, but they are seldom used in that state, on account of their softness. To remedy this, silver is alloyed with copper in the proportion of silver thirty-seven, copper three. In this state it is called sterling or standard silver, because it is the standard of silver values, and is always referred to where silver is spoken of, except in the rare instances of the use of fine or pure silver, which is always distinguished as "fine." These are the only two qualities recognised by assay masters, and are stamped or "Hall marked" with different symbols.

Gold is alloyed with silver or copper, or both, it may be in any proportion, but is only marked as 22, 18, 15, 12, and 9 carat by the assay masters. (Carat in this use is not a fixed weight, but merely the twenty-fourth part.) There are two standards: the first of twenty-two parts fine gold with two of alloy, which is the standard of gold coinage; and the second, eighteen parts fine with six of alloy, which is the standard of gold work generally, and is understood if quality is not specified.

The art of working these metals, as practised of old, and as it must be again if silver work is to remain "art" work, is now all but lost. *Improvements* of process—the electro-plating vat, the steam stamp, the spinning lathe—have, by the fatal facilities they offer for the evasion of skill and the production of imitations of its results,

* The posts I referred to are not good in design. The ornamental work is flimsy in execution, and does not properly fulfil its ostensible purpose, that of supporting the span carrying the cables. Its futility is indicated by the tie rod introduced above it to do its work.—T. S. B.



Nos. 1, 4, 5, 8, 9 are examples of the "rust works"—No. 9 (a sketch of the tram traction poles now erected in Sheffield) being shown as an example of bad design, the thick tie-rod at the top pointing out the futility of the decorative spandrils; Nos. 2 and 3 are suggestions for the avoidance of rust ravages; No. 6 shows the effect of redundant foliage, and No. 7 that of properly treated (*i.e.* vertically arranged) foliage in silhouette; Nos. 10, 11, 12 illustrate the remarks as to variety; and Nos. 20 and 21 illustrate the remarks about the value of ties in design. No. 19 is a sketch of "dog" used in pairs to support wood, and therefore out of place in the modern "art" grate for burning coals. No. 15 shows the effect of the first or forming stage of hammering a silver cup or vase body, No. 16 the next stage, and No. 17 the random markings of the hammer used as decoration but not constructive. Nos. 13 and 14 are sketches showing how the peculiar curve of raised silver or copper lends itself to decoration as exemplified in the Louis XV. or Rococo style, and the wretched travesty of it produced in England in the early Georgian period, and copied now in tons of silver goods every year. No. 18 is a design intended to show the great malleability of silver and treatment it is susceptible of for display of brilliancy of surface when required.—T. S. B.

reduced the silversmith to a mechanic; and the character and qualities of the material, instead of being developed and manifested in the work, are really thrown away.

For instance, let us consider, as a type of silver work, the making of a drinking-cup (in ecclesiastical use, a chalice). It is the emblem of hospitality, from the time of Melchizedek, and of fellowship in the greatest society in the world, the Holy Catholic Church, and therefore claims precious material and the best work. The bowl and foot are each hammered out of a disc of metal (formerly as cast from the crucible, on a flat stone or anvil, but the need of the mere labour of the earlier stage of the work is now superseded by the rolling mill). After being roughly dished into the hollow of a wood block or sand-bag, it is hammered on the outside in circular courses, with a hammer adze-shaped but blunt, upon a round-surfaced iron, squeezing the metal upward and inward and distributing its substance gradually as it is needed, thick in the bottom and thin at the lip, or otherwise as the worker wills, until the form desired is attained—all is as regular as the deposits which build up a snail's shell or a crystal, and the same results follow, good line and contour. In this state it is marked all over with the evidences of its process, the impressions of the hammer, in the form of long shallow grooves, transverse to the axis of the bowl. These are removed and the form still further developed by a similar operation with a flat-faced hammer (called a planisher). This leaves the inner surface quite smooth, and the outer covered with faint hexagonal facets—again you observe that these are the evidences of process, and their regularity is the index of the worker's skill and the perfection of his work; but it is not intentional, it is merely the accident of the process, and is generally removed in finishing or by subsequent decoration. These two conditions of the work are the sources of origin of that class of work which has been much practised lately under the euphonious titles of "chip-hammered" and "bullet-hammered," neither of them possessing the character of the original, and only serving to disguise the want of invention of its designer. The whole work is entirely dependent upon the skill of the craftsman, and this simple object illustrates the whole art of the silversmith. But now—a disc of silver is banged into a steel die, with a ton of iron for hammer, or is wrapped round a revolving piece of wood by the pressure of steel tools, and its character is that of the steel die or the turned piece of wood. It is exactly like a multitude of others, all weak where they should be strong, and heavy where they should be light—all *wrong;* and those that make them become like unto them.

The following paragraph headed "The Production of Hollow-Ware," which appeared in a recent newspaper, expresses their view of the matter:—

> There have been several trials recently on the part of Sheffield manufacturers of silver and plate to introduce the system of employing sectional "chucks," or moulds, in the spinning of hollow-ware, as is done in America, but up to the present time they have not been attended with the success anticipated. This is owing chiefly to the very considerable expense attending on the providing of the moulds. The system hitherto pursued here is to work with wooden moulds, which are more or less imperfect in outline, thereby leaving the entire shaping of the article to be spun to the skill and taste of the workman; occupying much time, and involving the production of the article in considerable cost. The American mould is made of brass or steel, and is of the exact shape of the article to be spun, and the operation can be performed by a *practically unskilled* workman with rapidity and ease. The beauty of outline, of course, depends not on the workman, but on the perfection of the mould. The objection taken to the use of these moulds by Sheffield manufacturers is their first cost, which is much greater than the wooden mould. They state that there is not a sufficient number of a single-pattern article required to justify them in setting up these moulds; but there are practical men in the trade who believe that by using the American moulds goods can be turned out at a less cost, and a very much larger trade might be secured.

The introduction of the method of silver-plating copper, by casting compound ingots and rolling them into sheets, has produced very peculiar effects. It called for very skilful treatment by the smith, in order that the thin silver coating should not be damaged in the course of working, and so encouraged skilled work; but the necessity for stamping its decorative accessories, such as borders, in very thin silver, led to an enormous development of that process, and we got that curious mixture of good workmanship and bad art which we see in much "old Sheffield plate," and the growth of the "stamp" curse.

Then that compound of nickel and brass, which is known as German silver, brought into large use by the discovery of electro-plating, began to play its part in the destruction of the silversmith's art. Electro-plating did away with the necessity for careful treatment, and opened a splendid field for the practice of bad workmanship in this way. German silver is a very refractory metal; its malleability is very low, so that it cannot be worked like silver or by silver methods: therefore the rolled sheet is cut into the nearest possible development of the form required, turned up and brazed at the edges, so that our cup would appear as a truncated cone, to be battered by mallets into some resemblance to its silver prototype, and then to have a bottom put in. It would be disfigured by its seams of brass, and might be by tin solder, or by patches let in to repair bad places, but it was all covered up in the plating vat. The whole process made a smaller demand for skill upon its workers, and this led to its gradual adoption for silver work, and so the art of working silver with the hammer fell, in Sheffield at all events.

The principal form of decoration is "embossed," or, as it is now the fashion to call it, "*repoussé*," perhaps not exactly accurately. I think the word originally stood for work in which the desired effect is produced by beating the ground down or back, a method much used for enrichment without alteration of contour.

Embossing is the beating *up* of the ornament from the back by hammer, punch, or "snarling iron." In open vessels or detached plaques, or in any circumstances allowing access to the back, the first two means are used; in others, the latter. The "snarling iron" is a bar of iron or steel with one end turned up, and the other, and thicker, end down, for convenient fixing in block or vice. This, being inserted into the article to be decorated, is set in vibration by blows of a hammer upon its exposed part. The upturned end, in contact with the metal, raises it proportionately to the force of the blows given and the firmness of the hand-grasp by which it is held, and its direction controlled. There is no resisting medium in this case, and only a soft one in the two just mentioned; and the metal adjacent to the parts struck is pulled up with them into a parabolic curve, which adds much to the charm of the work and indicates its process. You lose this altogether in stamped work, because its character is that of laboriously *cut* intaglio, lacking the suavity of contour and the touch and burr (given by subsequent elaboration from the front). Some of our would-be guides now insist that embossed work should not be touched from the front; but I contend that it must be in most cases, for the full use of the qualities of the metal and the satisfaction of ordinary vision, always considering the character of the material and the purpose of the article. What would be consistent with iron or pewter or brass is not with silver or gold. What would not be visible twenty feet away, we should miss at two.

This subsequent elaboration I speak of—the finish of the work—is performed by hammer and punch, the article being filled with a composition of pitch and brickdust, or plaster, which opposes sufficient resistance to the tool to prevent distortion of form.

Engraving, although so much used, is not in itself a proper means of decoration unless its lines are filled with "niello," a black substance composed of silver, lead, and sulphur; one of the dormant arts.

When I have mentioned that all solid joints are made with a solder composed of the metal in use, made more fusible by the addition of alloy, and fused under a gas blast urged by compressed air, I have said all that need be said about the silversmith's art. It applies to the other metals with little difference (except in the case of bronze), and with the exception of that important adjunct—the process of casting.

This perhaps calls for more painstaking care than any of the others, and is generally in a very unsatisfactory condition, although in special instances well done. The ancient *cire perdu* process was performed, according to tradition and Benvenuto Cellini, by preparing a model in pounded brick and clay, with other ingredients which must have made it not a very pleasant material to work in, then covering it with wax and finishing the surface of the wax. Upon this was formed the mould, by covering it with a similar composition, applied at first in a semi-liquid form and gradually thickened to the requisite strength, certain pins being inserted through the wax into the core to keep it in position. This mass of material was dried, and exposed to sufficient heat to melt the wax out, leaving a space between core and mould into which the metal was run. The mould and core being removed, the work was complete. But if this was the process, the result of the slightest failure must have been disastrous, and it is now never attempted, although the afore-mentioned theorists are always talking about it. It, however, gives a fair idea of the principles of casting, and in a modified form is used to this day. These modifications are important, and are these: for all large work the model is made in clay, which is moulded and cast in plaster. This plaster reproduction is moulded by surrounding it with moist sand rammed hard (generally in many sections), and confined in an iron frame. The mould, being removed from the model, is put together and filled also with sand, so that a sand cast is produced, which is pared down to the required thickness of the metal; it is then replaced in the mould and kept in position by core pins. The metal is run into the space formed by the paring of the core, and, if successful, the clay model is reproduced in metal. In small work, such as used by silversmiths, the same process is used for special work, such as statuettes, &c., but, generally, the model being moulded in plaster, the mould is divided into a convenient number of parts, generally opposite halves, and a layer of clay being carefully placed in each part a plaster half-core is run in; upon this hardening or setting it is taken apart and wax run into the space formerly occupied by the clay, and this film of wax is the pattern upon which the silver caster operates, and reproduces in metal. Here it would often be advantageous to melt the wax out, instead of removing the mould to take it out; but commercial considerations and custom prevent the innovation.

There is still another method of reproducing models in metal, the "galvano-plastic," as it was originally called—electro-typing—in which the metal is deposited upon the surface of the mould, from its solution, by electric agency: it is electro-plating prolonged until a self-supporting thickness of metal is deposited. It is accurate to the most microscopic detail, and, of course, its character is, to that extent, that of the clay or wax in which

the model was wrought, and not that of metal at all, neither is it strong or tough, but soft and short. Where the model is a piece of metal-work itself, it is deceptive in its likeness to the original. (I do not know whether it is possible for it to be more like it than itself, but I know in one instance that an original in *repoussé* was disqualified in a competition promoted by a London company—one of the old City companies—as "merely an electrotype.")

Having indicated the principles, and touched upon the processes of metal-work, I will add a few words about the revival I spoke of at the commencement. One of its evidences was visible in Sheffield a short time ago in a collection exhibited in the New Gallery, which did not attract the attention it deserved. Without saying that it was altogether admirable—it contained some very beautiful objects—it was full of suggestion, and showed an appreciation of the qualities and capacities of material, and a freedom of treatment, which were absolutely refreshing. But there were evidences of affectation (which is poison to good art), which point the danger I referred to of neglect of principles: such as the imitation of the crudity of old work; the covering of articles with irregular hammer marks, not as the result of the forming process (or, if so, the work was very badly done), but for their own sake as decoration; and similar tricks unworthy of the name of art, which must not be practised if that revival of the union of heart and head, hand and hammer, is to be realised and resume its power as the expression of the presence of art in our midst.

To which happy end I, as an earnest craftsman, ask you, the architects and art leaders of Sheffield, to give all the assistance of your influence for the honour of your city and the credit of your country.

THE ANCIENT MARBLE QUARRIES OF GREEK CIPOLLINO.

By W. Brindley, F.G.S.

AFTER extensive search in Greece on the Island of Eubœa, continued for several years over a large extent of country containing numerous quarries of inferior material now not worth working, a series of old quarries with beds of superior quality have at last been found on the Western coast, a little north of Carystus. The mule road from Calcis to Carystus goes through the centre of the Island, passing through the villages of Stura and Kapsala, which lie in a valley. Between these villages and the sea on the western side, a range of mountains rises to an altitude of 2,000 feet, running steeply down to the sea. One mountain still goes by the ancient name Pyrgadi, referring to the fort or outlook-tower on the summit, which commands an uninterrupted view south of the entire Gulf of Petali, and west the mainland of Attica with the mountain-range of Pentelicus. Upon the sea face of this mountain are the ancient quarries extending from the summit to the base near the sea. The upper range of quarries is very extensive and of great interest; showing old methods of working; columns and architraves of immense size finished and partly worked lying in all directions. All these were wrought, engaged to the solid rock, and when roughly shaped were wedged off and finished; numerous examples of work in progress are still *in situ*. One quarry contains the old smithy, with a bevelled trough all furrowed and worn by the tempering of the tools; while another trough of large dimensions lies alongside, into which the tools were thrown to cool after being tempered. Another quarry of large extent contains a number of square-cut holes about 15 inches across, where the upright posts were inserted; these extend also down the old mountain-slide at intervals all the way, and were used by the aid of ropes for the lowering of extracted masses, some of which were 60 tons or more in weight. As the separate works were completed they were passed over a great paved platform, which is between the various quarries and the top of the slide, to the sea, for embarkation to Rome and elsewhere. This platform, no doubt, was that of the overseer, where the blocks were numbered and received the quarry and workmen's marks. On the upper part of the mountain-slide, where it crosses, a slight depression is made for some 70 feet, with transverse monoliths of split columns and architrave blocks, which were found faulty in working, and as all the Roman monolith columns had to carry weight, no doubt the overseer condemned them at the outset. In the Bay the old harbour-mole for loading is visible at low water, and a barge-load of sunken columns is alongside. The Pyrgadi quarries no doubt belonged to and were exclusively worked for the State, while the lower quarries near the sea, named Duka, would appear to have been those of a private individual, and worked for lesser objects, such as pedestals and decoration, the quality being exceptionally good. The light parts are of a bluish and avanturine translucency with ivory whites, the darker banded parts being all shades of green and lakey greys, curled and bent about in all directions, producing, when cut into slabs and opened out, the most charming decorative panels or dados for wall-surfaces.

Carystium or Eubœan marble, now called by the Italian name Cipollino, from its onion-like markings, was the first coloured marble used in Rome. Some of the earliest examples are the ten columns to the portico of the Temple of Antoninus and Faustina in the Forum of Rome, thirty-eight feet long. Eight columns of similar size now remain in the old quarries, evidently worked at

the same time, but never used. The quality of this marble and its appreciation by the ancients is proved by the immense quantity used; in Rome alone the number of columns of it, some of which are of immense size, are more than one-third of the entire various coloured marble columns added together. The Romans always used monoliths of coloured marble for their columns, never drums.

Roughly speaking, probably eighty per cent. of the wall and pier marble incrustation of St. Mark's, Venice, is of this Eubœan Cipollino, the whole of which has been obtained by the sawing up lengthwise into slabs old columns opened out to produce continuous patterns, chevron or otherwise, as the veinings may happen to produce; this is readily proved by examining the open vertical joints which bevel inwards. The narrow outer slabs of the columns were afterwards used for strip linings of the semicircular alcoves; so nothing got wasted. These marbles have always been supposed by Mr. Ruskin and other writers to have been brought from demolished buildings of earlier date—and as regards capitals it may be correct; but when we consider that the Turks held and fortified Calcis and other places near the old quarries, and that the residents to this day are not Greeks but Albanians, it is next to certain that the Turks knew of the quarries, and as only pieces remain of columns of moveable size, while those of practically unmoveable dimensions are left intact, it seems more than probable that the bulk of the supply was unused wrought material of late Roman Byzantine date from the quarries.

The quarries are now being reworked, several shipments of beautiful quality having arrived in London. It is being used in a number of important works in London, and some large monolith columns are now being worked for the new Roman Catholic Cathedral of Westminster.

REVIEWS.

THE ARCHITECTURE OF FATHPUR SIKRI.

Portfolio of Indian Architectural Drawings. Part I. Prepared by Edmund W. Smith, Archæological Survey North-West Provinces and Oudh. Photographed by W. Griggs, London. Issued by the Government, 1897.

The first volume of *The Survey of Fathpur Sikri*, by Mr. E. W. Smith, was published in 1894, and a review of it by Dr. Burgess was given in this JOURNAL.*

The reason for the publication of this "Portfolio" of drawings is thus explained by Mr. Smith in a short preface to them: "The originals from which the accompanying photo-lithographs have been reproduced were prepared in the first instance, amongst others, to illustrate the Report of the Archæological Survey of India, entitled *The Moghul Architecture of Fathpur Sikri*. The size of the Archæological Survey Reports being only 13 by $9\frac{3}{4}$ inches, the illustrations were necessarily, in some instances, on too small a scale to be of much practical use to architects, engineers, art students, and others. They serve the purpose for which they were intended; but to increase their utility and to further spread a knowledge of one of the most interesting periods of Indian architecture, the Government of the North-West Provinces and Oudh decided to reproduce a selection of the drawings on a sufficiently large scale to make them of more use to the scientific building professions, artisans, &c."

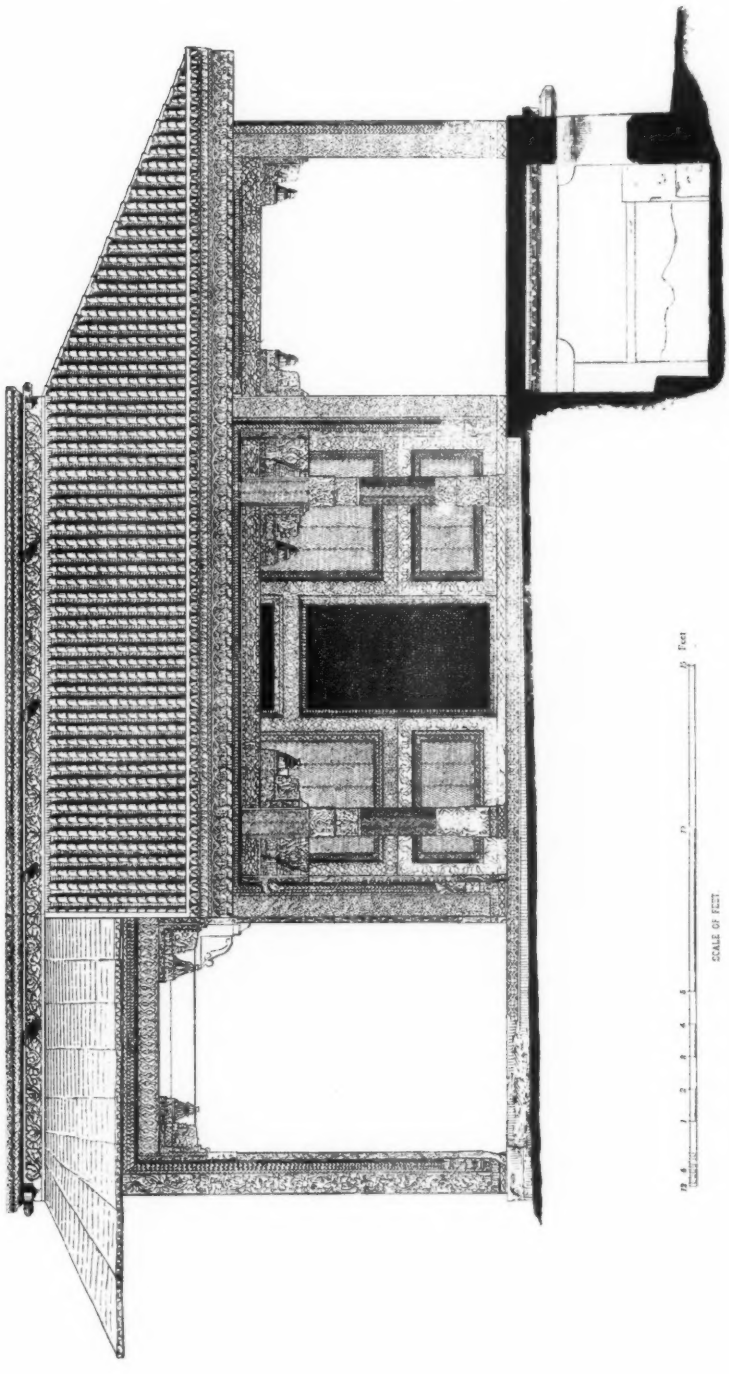
This being a portfolio of drawings, with only two pages of notes, there is almost no literary matter to deal with in a review. Some reviews are made up mainly of extracts—and that may perhaps be a good plan to follow in this instance—so two of the plates are here reproduced in the character of "extracts," as the best means of giving some idea of the work.

For this purpose the Turkish Sultana's house and Birbal's house are reproduced from the originals. Of these Fergusson wrote that "they are small, but it is impossible to conceive anything so picturesque in outline, or any building carved and ornamented to such an extent, without the smallest approach to being overdone or in bad taste."† On the same page Fergusson gives a very beautiful illustration of one of the pillars with brackets from the Sultana's house. There is also a cast of the same pillar and brackets in the South Kensington Museum, coloured to represent the red sandstone, of which this house is wholly constructed; from it, without the trouble of going so far as Fathpur Sikri, some notion may be formed of the great beauty and delicacy of the carving. The whole house is covered with similar tracing both inside and outside.

Birbal's house was erected by the Rajah Birbal for his daughter, a Hindu lady, who became one of Akbar's wives. Akbar, the greatest of the Muhammadan Emperors, was no bigot, but took Hindus as well as followers of the Prophet into his service. Birbal was a Hindu and became Wuzeer, or Prime Minister; he was in many ways an able man, for he also fulfilled the functions of Poet Laureate. Akbar and he were great friends, and many amusing stories have been handed down about them. Attention might be here called to a feature in Birbal's house—that is, the small arched niches in the walls; this is still followed in native houses about Delhi, Agra, and most of the North-West Provinces. These niches are not only beautiful in themselves, but they are useful in many ways, and they might be adopted by our architects for domestic structures, and reproduced in harmony with our own

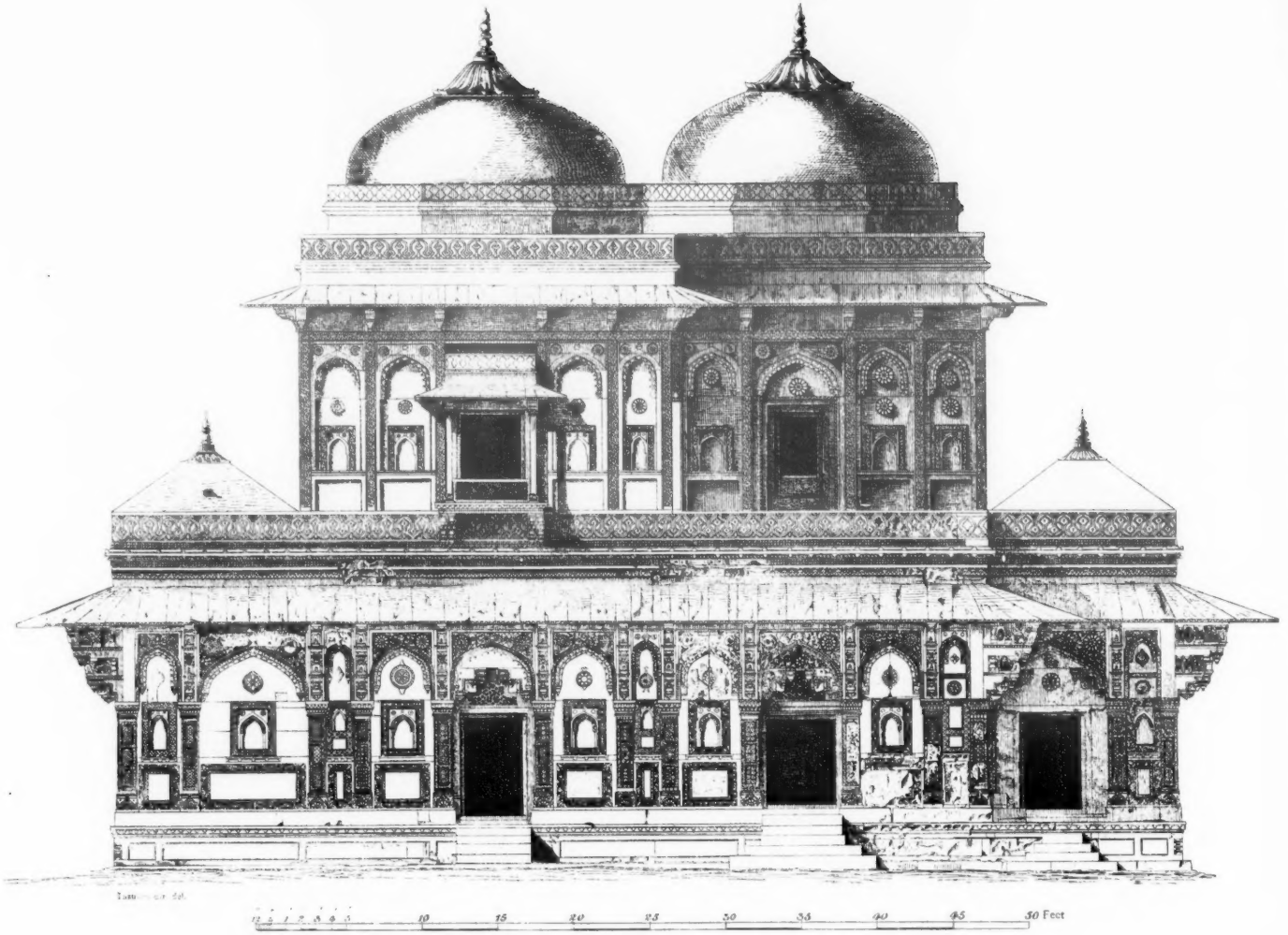
* See JOURNAL R.I.B.A., Nov. 25, 1895, p. 61.

† *Indian and Eastern Architecture*, p. 579.



SOUTH FAÇADE, TURKISH SULTANA'S HOUSE, FATHPUR SIKRI.

Erected between 1565–1605. Built entirely of red sandstone, the roof being formed of solid slabs of stone, beautifully carved on the soffit.



SCALE OF FEET.

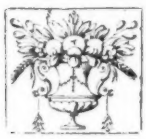
EAST FAÇADE, RAJAH BIRBAL'S HOUSE, FATHPUR SIKRI.

Erected 1571. Built entirely of red sandstone, except the outside of the domes and porch roofs, which are coated in cement.

styles, for they would admit of great variety in design.

It was in 1860 that I first visited Fathpur Sikri and made some sketches. I remember how delighted I was with the place; I had just come from Delhi, where I had been wandering about amongst the remains of the older cities of the same name; and where among the ruins I think there are some examples of earlier Muhammadan architecture that are superior to anything at Fathpur Sikri. Still, at Akbar's time, the latter half of the sixteenth century, that architecture could not be looked upon as having begun its period of decay; but it is visible in Jehangir's reign, and still more perceptible when we come down to Shah Jehan's time. After that there is no Muhammadan architecture in India that is worthy of notice; the bulbous dome had its commencement in Shah Jehan's reign; forms began to be exaggerated and flamboyant; the ornament grew florid and meaningless; and the downward career went on very similar to what we are all familiar with in the decadence of other styles. At Fathpur Sikri, Muhammadan architecture was free from the defects just mentioned; it was still a living style. Many of the features of Hindu architecture had been absorbed into it, particularly the bracket, a form that we might perhaps utilise at home here more than has yet been done, for its capabilities are numerous. There are other features that may be suggestive, and might be adapted with good effect into our own styles of working. It is to give architects a chance of doing this that Mr. Smith has made his selection of details for this portfolio. It contains fifty-two plates, which have all been very carefully and beautifully done in pen-and-ink, the work of native draughtsmen who have been taught in the schools of art which now exist in various parts of India. Some of the plates, I notice, have been done by my old Brahman friend, Bhairav Bakhsh, a pupil of the Jeypore School of Art. Some members of the Institute may remember when the originals of similar drawings, which were done for the *Jeypore Portfolios*, were exhibited by Colonel S. S. Jacob at one of our meetings; and how much they were admired on that occasion.

WM. SIMPSON.



9, CONDUIT STREET, LONDON, W., *26th November* 1898.

CHRONICLE.

Elections by Unanimous Recommendation of an Allied Society.

In accordance with the opening clause of the proviso to By-law 9, the following gentlemen, unanimously recommended for membership by the Council of the Glasgow Institute, and found to be eligible and qualified according to the Charter and By-laws, were duly elected Fellows of the Royal Institute at the Council Meeting of Monday the 21st inst.:—

JOHN HUTCHISON, of 127, St. Vincent Street, Glasgow.

ALEXANDER CULLEN, F.R.S.Edin., of Clyde Street, Motherwell, N.B.

Birmingham Association Studentship Prize.

The Annual Report of the Birmingham A. A. states that the attendance of its students at the various classes gives evidence of increased interest, the meetings having been well attended and much good work done; but there has been little or no competition for the prizes offered in connection with them. The Council of the Birmingham A. A. have therefore determined to abolish the present system of numerous small prizes, and to offer a travelling studentship prize of fifteen guineas for the best set of measured drawings and a design for a subject to be selected by the Council. It is hoped this will be an inducement to students to sketch and measure in their spare time, and qualify for the valuable prizes offered every year by the Royal Institute.

Bristol Society Prizes.

In furtherance of their efforts to improve and encourage architectural education in their district, the Bristol Society of Architects offer for competition among their student-members prizes, value six, three, and two guineas, for the best sets of measured drawings of specified examples from English buildings, ancient or modern.

Liverpool Royal Institution—Award of Prizes.

The following prizes for "Architectural Composition" have been awarded by the Liverpool

Royal Institution:—First Prize of Fifty Guineas: to Messrs. Briggs & Wolstenholme, 3, Lord Street, Liverpool. Second Prize of Twenty Guineas: to Mr. R. W. Bedingfield [*A.*], 5, Hotel Street, Leicester.

Protection of Florentine Monuments.

The Institute has received from the Society for the Protection of Old Florence a memorial, which lies for signature in the Library and in the office, headed as follows:—

"In consequence of the complete destruction of some of the most interesting and beautiful portions of mediæval Florence, and of the threatened destruction of many more, a Society has been formed 'For the Protection of Old Florence,' among whose members we find Prince Corsini, Prince Strozzi, Count A. della Gherardesca, Count U. Serristori, Marchese F. Torrigiani, Count F. Guicciardini, Count Piero Capponi, Marchese Carlo Niccolini, Professor Villari, Signor Ulisse Cantagalli, the Librarian of the Laurentian Library and the Director of the Museum of the Bargello. Feeling how serious a danger is threatening one of the most beautiful of our historical cities, the undersigned English and American lovers of Florence desire to express their cordial sympathy with the endeavours of the Società per la Difesa di Firenza Antica."

The late John Gillett Livesay [*A.*].

The death of Mr. John G. Livesay [*A.*], which occurred at Ventnor on the 19th ult., was among the obituary announcements made by the Hon. Secretary at the opening General Meeting [p. 16]. Mr. Livesay was the eldest son of the late Augustus F. Livesay [*F.*], and had been an Associate of the Institute since 1882; but for twenty years before that date he had practised his profession at Ventnor. In 1864 he was appointed, by the Local Board, town surveyor, and on his resigning that office eleven years later, he took the position of consulting engineer to the Board. During his tenure of office he inaugurated and carried out an extensive sewage system, extended the sea-walls, and undertook several other important public works. In addition to this and to the general practice of his profession, Mr. Livesay was for twenty years manager of the Ventnor Gas and Water Works, of which Company he was a director. He was also surveyor to several large properties in the neighbourhood, among which are included the Steephill and Lowtherville estates, in which, during the term of his agency, great developments have been made.

University of California.

The following letter has been received from the Chairman of the Phœbe Hearst Trustees:—

Brussels, 30th October 1898.

Dear Sir,—The Jury for the International Competition for the Phœbe Hearst Architectural Plan for the University of California—composed of Messrs. J. L. Pascal, President, representing France; Paul Wallot, Vice-President, representing Germany; R. Norman Shaw, representing England; Walter Cook, representing the United States; J. B. Reinstein, representing the University of California—closed its sessions at Antwerp on the 4th October:—

The following is a list of the authors of the plans admitted to participate in the final competition:—

Messrs. Barbaud & E. Bauhain, Paris;
E. Bénard, Paris;
Prof. F. Bluntschli, Zurich;
Messrs. D. Despradelles & Stephen Codman, Boston;
R. Dick, Vienna;
J. H. Freedlander, New York;
G. Héraud & W. C. Eickmuller, Paris;
Howard & Cauldwell, New York;
Howells, Stokes & Hornbostel, New York;
Lord, Hewlett & Hull, New York;
Whitney Warren, New York.

The vote of the Jury upon each of the plans selected was absolutely unanimous; some of the Jury also recommended that four plans, besides those admitted to the final competition, should be purchased for the University of California.

The names of the authors of these plans are as follows:—

Messrs. Joanny Bernard & Robert, Paris;
Charles des Anges, Paris;
Ernest Flagg, New York;
Fred. Skjold Neckelmann, Stuttgart.

The members of the Jury, together with the architects invited to participate in the final competition, will go to California, and in June 1899 the Jury will there decide the final *Concours*, and select the plan, which must be approved by the Regents of the University of California, and thereupon the buildings will be erected with the utmost rapidity. It is expected that all the buildings will be completed within the next twenty-five years.

Yours truly,
J. B. Reinstein.

MINUTES. II.

At the Second General Meeting (Ordinary) of the Session, held Monday, 21st November 1898, at 8 p.m., Mr. H. L. Florence, *Vice-President*, in the chair, with 27 Fellows (including 10 members of the Council), 18 Associates (including 1 member of the Council), 1 Hon. Associate, and several visitors, the Minutes of the Meeting held 7th November 1898 [p. 16] were taken as read, and signed as correct.

The reader of the Paper referred to below, attending for the first time since his election as Hon. Associate, was formally admitted, and subsequently signed the Register.

A Paper by Mr. Francis Bond [*H.A.*], M.A., F.G.S., On the Comparative Value of Documentary and Architectural Evidence in establishing the Chronology of the English Cathedrals, having been read by the Author, and illustrated by a series of photographs shown by the lantern, a letter on the subject from the Bishop of London was read by the Chairman, and a discussion ensued: whereupon a vote of thanks to the author for his Paper and illustrations was carried by acclamation.

The proceedings then closed, and the Meeting separated at 10.15 p.m.